

# SUBJECT SIGN-POST

A Quick Guide to the Business Articles and Designs  
Presented in This Issue

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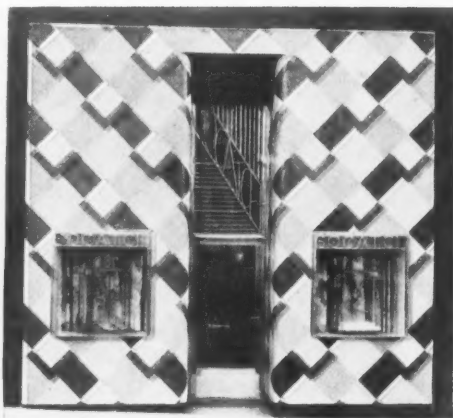
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# for vividly colored floors . . . . . choose Atlas White terrazzo

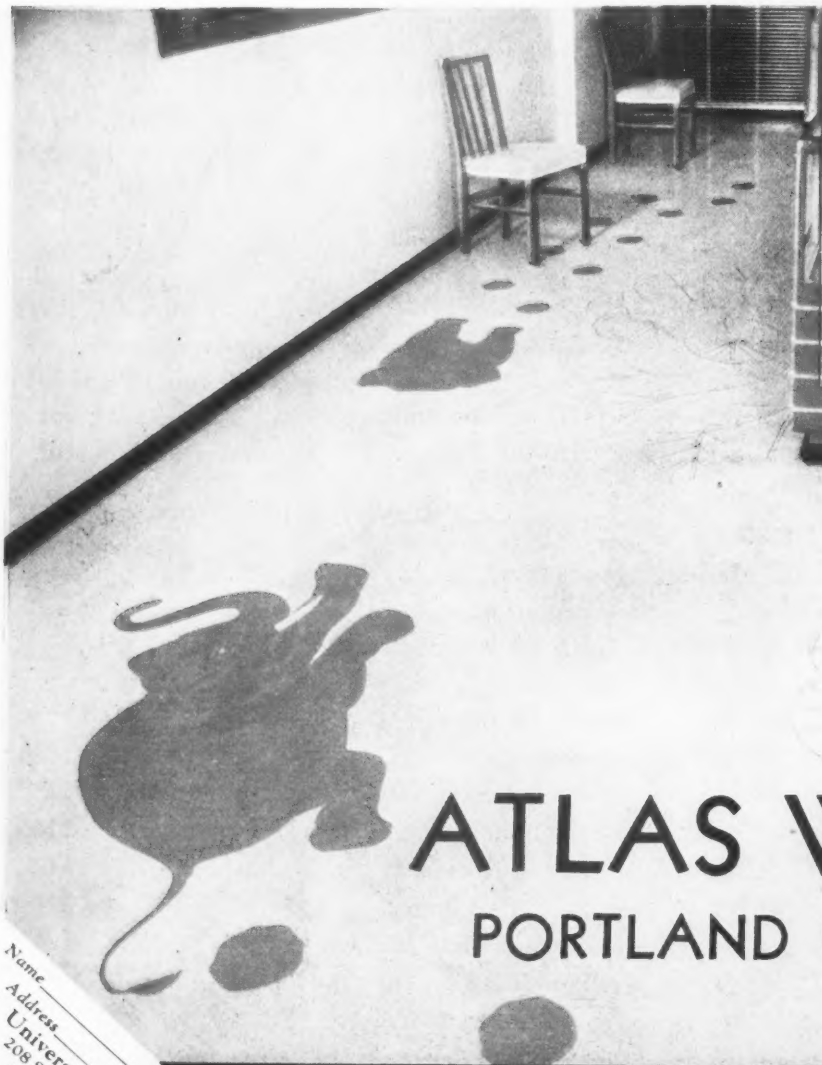
**O**WNERS of stores, apartments and business buildings are welcoming suggestions that make their properties colorful, attractive and easy-to-rent. The beauty of Atlas White products helps you to obtain contracts from these owners for both new and remodeling work.

With terrazzo made with Atlas White portland cement, an endless variety of floor designs may be worked out in bright, clear colors and pastel shades. Such floors are durable under severe wear. Their beauty is permanent.

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Socatch Bakery, Chicago. Both the unusual terrazzo floors and colorful art marble front are made with Atlas White portland cement. Holabird & Root, architects; Western Mosaic & Terrazzo Co., terrazzo contractor; art marble furnished by Chicago Art Marble Co.—all of Chicago.



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**Universal Atlas Cement Co.**

Subsidiary of United States Steel Corporation

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A. E. 3-21



## AMERICAN BUILDER AND BUILDING AGE

### LIMITATION OF LABOR OUTPUT

THE high cost of building, of which there has been so much complaint since the war, has been principally due to high labor costs. These have been due not only to high and increasing wages, but also to the successful efforts of labor unions to limit the amount of work done by each worker. High wages paid for efficient labor are conducive to prosperity. High wages paid for inefficient labor are a very serious handicap to any industry, and tend to destroy prosperity and to prevent recovery from depression.

A good example of the efforts made by some unenlightened classes of persons to burden industry with excessive costs and prevent prosperity is afforded by the recent introduction in the Texas legislature of a bill ostensibly to regulate the use of spray painting machinery, but actually to prevent its use. Masquerading as a public health measure, this bill, if passed, would compel builders to use hand brush methods and to employ three to ten times as many men as are required to do painting by machine spraying. Spray painting is being used extensively, and experience has not shown that it is any more hazardous to health than other painting methods. In every case of lead poisoning of which there is record the victim was a brush painter and not a spray painter.

Another instance of prejudice blocking progress by limiting output happens also to be afforded by the paint trade. The contract for a group of buildings for a farm estate near Waukegan, Illinois, is right now about to be let. These buildings, of Colonial design, are to be sided with northern white pine and the specifications call for low-moisture content siding, to be primed on both sides with aluminum paint.

The best and cheapest way to meet these specifica-

tions is by spray painting at the mill before the lumber is shipped to the job. Power painting gives deeper penetration of the priming coat. Applied at the mill, as the lumber comes from the dry kilns, no moisture has a chance to enter. A better and more lasting job is produced and the cost, as compared with brush painting on the job, is very much less.

Union rules in Lake County, Illinois, however, prevent this modern efficiency; they stand in the way of this added quality and this cost saving. According to the union rule, this siding must be delivered without protection and be laboriously hand painted on the job.

### Loss of Confidence Killing Demand

Every concern and individual interested in the revival of building in this country should exert all the influence possible against efforts of this and every other kind to limit the output of building labor. The building industry is in competition with other large industries for the favor of the public and the money it has to spend. As has been previously pointed out in these columns, the principal competitor of the home-building industry is the automobile industry. Every family must have a home of some kind, and every family wants one or more automobiles. The manufacturers of automobiles have been able to make such reductions in the prices of cars as they have because they have been so successful in reducing their labor costs by increasing their output per employee through the introduction of labor saving machinery and devices. As they have reduced their costs and prices they have constantly enlarged the market for automobiles as compared with the market for good homes.

There has been great unemployment in the building industry within recent years. This has been due to lack of demand for building, which, in turn, has been



due partly to the relatively high cost of building. Unenlightened labor leaders seek to reduce unemployment by reducing output per man upon the assumption that it will create a demand for more men. Its true effect is to increase costs, the effect of which is to reduce the building market and thereby increase unemployment in the building industry.

The United States is the most prosperous country in the world. Even during the present world-wide depression its people are much better off, and suffer relatively much less from unemployment, than those of other countries. It has the greatest wealth per capita in the world, and every class of its people has a larger average income than the corresponding class in any other country, because its production per capita has been greater than that of any other country. Those who try to limit output per man by opposing the use of labor saving machinery are trying to prevent progress and to destroy the means by which the country's industry has been enabled to give constantly increasing employment and to pay much the highest wages ever known.

Whether correctly or not, the public believes that limitation of output has been practiced in more ways in the building industry than in any other industry. The future prosperity of the industry depends in large measure upon the destruction of such policies and practices and the eradication from the public mind of the belief that, owing to them, the cost of building is excessive.

## CAREFUL PIPE SELECTION IMPORTANT TO BUILDERS

**A**MONG the many responsibilities which builders have to shoulder, none is more loaded with "grief" than that of selecting the heating and water service pipe to go into the buildings they erect.

The builder may or may not be handling the pipe work himself; it makes no difference. If in a few years the pipes rust out or clog up, costly repairs and dissatisfaction result—and it is the builder who is blamed.

It is bad enough when building materials that are out in the open fail and have to be renewed; but it is doubly distressing when the pipes, built into the walls as they are, go bad—ruining walls and ceilings and forcing the building owner to submit to a veritable major operation to repair the damage and rectify the fault that caused it.

One instance on record of such costly pipe failure is of a building only twenty years old where piping replacement occasioned an expense of fifteen hundred dollars, whereas the builder originally, if he had selected his pipe with proper care, could have furnished a permanent, trouble-free job for only one hundred dollars more.

The manufacturers of pipe have perfected their service to the building industry by giving careful study to

the problems involved in producing the right pipe to meet the special conditions encountered. They point out that corrosion conditions vary not only between one part of the country and another, but between different services in the same installation. For this reason, blanket recommendations are unsound. The experts in this field have to be guided by experience; and, in each case, they specify the kind of pipe that is right for that particular place and use.

Builders recognizing the importance of these matters will give special thought and care to the selecting of the pipe to be used in their buildings, and then will make very sure that that pipe and no other is actually used. That builders will become "pipe conscious" and take advantage of the technical experience regarding pipe performance which is now available seems reasonable in view of the large amount of pipe required in the modern home, apartment and business building.

## WHAT IS A CONTRACTOR?

**W**E have heard contractors and builders called a lot of things, some of them not very complimentary, but the best that has come to our attention recently is *managing executive*.

That sounds pretty high-hat for such an every-day, honest-to-goodness, straight-forward business as contracting, but it does indicate something that we think is important.

The fundamental problem in building construction is *management*, and it is an incontrovertible fact that the keystone of success is executive ability coupled with *planning*.

Colonel William A. Starrett calls it "organized foresight", or "pre-vision". He has said that thorough planning is the very essence of successful building.

It becomes more apparent every day that ninety per cent of the failures in the building business are caused by lack of even ordinarily good forethought. At this time of the year most builders are laying out their schedules for the rush of spring building. The more prudent will also give some thought to *planning the work of the entire year*.

## BATTLE AGAINST SILICOSIS

**O**NE of the commendable activities of the New York State Labor Department, in conjunction with contractors, which shows the trend of the times in safeguarding human life, is the progress being made in preventing silicosis, a disease which affects men employed in rock drilling, in foundation and tunnel work. The toll of sickness and death among workers was extremely serious, but it seemed impossible to find a way to control the dust created which, when taken into the lungs, was harmful to operators.

For several years, the Labor Department has been working on this problem in conjunction with contractors, and a number of devices tried out. It is now announced that a good method of dust collection which is quite efficient has been evolved, and that this one remaining menace to human life will soon be conquered.





## POWER—ACTIVITY—PRODUCTION

The Concrete Mixer with Its Power Charging Skip Is a Symbol of the Mechanical Helpers on the Job Which the Building Industry Must Use with Ever Increasing Efficiency If It Is Successfully to Compete with Other Industries.

# GOOD SHOWMANSHIP PA

## A Dissertation On Pink Whiskers, Public Enemies and What Builders Need to Do To Let the Public Know They are out After Business

IN this great land of Ballyhoo, Bustle, and Bunk it takes a good deal of first class showmanship to attract business.

Unless you own a set of pink whiskers, a crooning voice, or an 85-story skyscraper with a dirigible mooring mast, you are likely to have difficulty persuading the old home town that you are one of its leading Citizens.

Still there are ways,—short of murder, flagpole sitting, or being listed as a Public Enemy—that honest, hard-working members of the building industry can let the world know they have a bangup, good product for sale at a fair price.

In fact, we feel that contractors and builders have been notoriously weak in this department, and have stood around long enough letting the other local businessmen get all the attention.

We feel that builders need more good showmanship,—not the flagpole sitting variety, but the reputable, respectable business-getting kind. It was all very well once-upon-a-time to say that if you have a good product, business will seek you out, but that doesn't hold in this age of advertising appropriations and public relations councils. Good business today demands that the contractor, not only for his own sake but for that of homebuilding in general, must advertise himself and his profession. He has got to come out from his side-street obscurity into the limelight of public attention, demonstrating over and over again the facts we already know, that to build a home is one of the most worthwhile investments a man can make, and that the local, independent contractor is the man to do the work reliably and well.

There are many forms of showmanship that will help bring your name and your business before the public eye. You can hire a brass band, and go at it that way. Or you can wear a brown derby, or run for mayor on the Communist ticket. But there are other ways, and possibly better ones, for members of the building industry.

In the first place, are you getting the most out of your local newspapers? Well made up advertisements, placed as part of a carefully thought out program, are probably the most common attention-getting devices. In addition to this, however, your business should be represented in the news columns of the local paper, for your activities are news. People are vitally interested, especially right now, in building activities of any kind. Let the newspapers know what you are doing, and keep firing away with a barrage of news releases. If you haven't time to write them yourself, get a local newspaper or advertising man to do them on a part-time basis. Or even a high



school boy, interested in journalism, could prepare newspaper stories with your help.

Get acquainted with the newspaper staff, find out the sort of copy they like, and then keep them supplied. Pictures of the houses you are building or selling, of yourself and workmen, of materials, new house plans, new and projected activities will interest the real estate or building page editor. Do yourself and him a favor by supplying them. Two-line "teaser" ads inserted one a day over a long period of time are very productive for the money spent.

Some people just naturally seem to attract attention. Take Will Rogers, Texas Guinan, or Mayor Jimmy Walker. Their capacity for attracting attention has not only made them famous, but has made them wealthy. In the same way, good showmanship by contractors and builders will pay in increased business. You don't need the wit of a Will Rogers to take part in civic affairs, help promote worthwhile movements, speak before clubs and city organizations, lead the way in home-town improvement campaigns. Such activities take time, but in addition to the good they enable you to do, they are profitable in a business way.

There are a thousand ways to practice good showmanship, ranging from the most hair-raising stunts to practical service for townsmen.

SHIP PAYS!



The Ballyhoo Artist Is Still Bringing in Flocks of Customers; but He Has Strong Competition from Flagpole Sitters, Endurance Fliers and Politicians.

Contests, for example, are very useful in getting publicity. Consider some of the following, either co-operatively staged with other building interests, or by your own organization alone:

Architectural competition for attractive home designs; anyone allowed to enter; winning design to be featured by builder.

Contest for definition of "What is a home?"

Offer prizes to students in manual training schools, colleges, high schools for miniature model homes, to be used by you in window displays.

Essay contest for school children on value of owning your own home; winning essay to be published in newspapers and displayed in public places.

Picture contest for most beautiful home in the community; most attractive photos to be made up in traveling display for community centers.

Contest among housewives for favorite floor plans. Rough sketches only required, accompanied by reasons for room arrangement. Best and most popular plan for four, six, and eight room houses to be embodied in model homes.

Award prize to members of grade school, high school, and college classes preparing best essays on "How to modernize the old home."

These and many other contests may be arranged inexpensively and yet in such a way as to produce a tremendous amount of publicity and good-will.

A new attention-getting stunt is the airplane, used

to distribute circulars or by means of smokepots, spell messages in the sky.

Radio programs are the liveliest advertising media of the present. Ranging as they do from the costly, elaborate program to the one-minute "mention," they can be arranged to fit the pocketbook of any size business. The co-operative radio program, conducted by a group of builders or of local building interests to promote home construction, is growing in popularity.

Your motor trucks or salesman's automobile can be made moving signboards. Have you tried displaying your name and business slogan in big letters in this manner?

Job signs are undoubtedly of value, and are far too often neglected. They should be large, attractive, and interesting. In addition to giving your name, address, telephone number, and slogan, they should describe the project, for it is essential that your name be linked with the building that is going up.

Numerous novelties are useful in getting and keeping your name before prospective customers. Blotters, pencils, matches, memorandum pads, calendars, paper weights are just a few of the many that may be put to work for you. After all, the best advertising is that which keeps up a persistent, constant appeal to the eye,

(Continued to page 110)



# BUILDERS GIRD FOR ACTION

## Revenue Sources of Four Leading Industrial States in Percentages

Showing variations by states and years

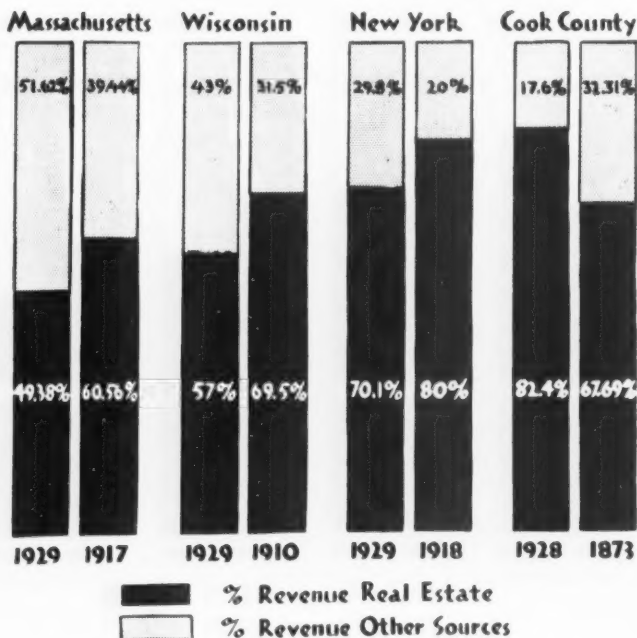


Chart prepared by the Association of Real Estate Tax Payers of Illinois.

### HOT SHOTS AT TAX TARGETS

**S. H. THOMPSON**, President American Farm Bureau Federation, "Property whose earnings represent 15 per cent of the net income of Illinois is paying 95 per cent of all State, County and local taxes in this State."

**JUDGE ARTHUR J. LACY**, Chairman Property Owners Division of the National Association of Real Estate Boards, "One-tenth of all the private property in nine counties of Michigan were recently sold in one day for taxes."

**FRED W. SARGENT**, President Northwestern Railway and member Tax Committee, U. S. Chamber of Commerce, "\$157,000,000 might be saved by cutting out duplication of the 400 existing tax agencies in Chicago alone."

**DR. JOHN E. BRENDLY**, Iowa State College of Agriculture, "If taxation can be taken out of the hands of elected township assessors and put under a State board with appointed assessors it will do much to solve the problem of inequality of assessments."

**PROF. SIMEON LELAND**, of the University of Chicago, Tax Consultant, "The general property tax never did operate fairly, Colonial records show it did not even in Colonial times."

Join with Real Estate Interests in Organizing Property Owners to Campaign Against Government Extravagances and for a Fairer Distribution of Tax Burden

**A**S clearly pointed out in the February issue of this publication, the men of the building industry, in all of its branches, have a very direct interest in the tax fight that is now being waged on a wide front across the country. They realize that high taxes discourage building and that before there can be any great upswing in building, the menace of exorbitant and confiscatory taxes on homes will have to be removed. They begin to see that, in order to bring effective pressure to bear on our numerous law making and taxing bodies, property owners and all those interested in real estate improvements must get together, to fight for new economies in government and for an equalized distribution of the tax burden.

Following the publication of our February editorial, "Fight for Lower Taxes," strong assistance developed in an unexpected quarter and demonstrated how deep and far reaching is the anxiety over the present tax situation. On February 5 the American Farm Bureau Federation called together in Chicago a nationally representative group of manufacturers, bankers, real estate economists, representatives of labor and of women's organizations for a two-day conference on taxes.

The meetings were well attended, the discussions thorough and the program of action recommended gives promise of constructive results.

Remedies, and the means of accomplishing them are contained in the formal resolutions unanimously adopted by this meeting as follows:

"Your committee is impressed with the necessity of full co-operation by the groups represented in the Conference, in trying to secure

"1. Distribution of the costs of government so that they may be fairly shared by all persons according to their ability to pay;

"2. Proper budgeting, supervision and control of Federal, State and local expenditures; publication of proposed local budgets and bond issues, with provision for appeal before their adoption by taxpayers of the unit affected to a quasi-judicial tax board; better administrative organization, the modernization of the structure of government, and the consolidation of under-sized units and the elimination of unnecessary units thereof; to the end that public money may be expended economically and that costs may be reduced wherever possible without impairing necessary public service;

"3. Creation of committees of taxpayers representing the tax paying interests appointed by the Governor, President of the Senate and Speaker of the House of Representatives of the respective states for the study of tax problems and to make recommendations to the legislatures for the revision of the tax laws;

"4. Careful study of the inter-relation of Federal, State and local taxation in the light of economic facts

# ON IN FIGHT FOR LOWER TAXES

**Excessive Taxes on Real Estate Improvements Seen as Greatest Obstacle to Revival of Building Activity—A "Job" here for all of the Building Industry**

and tendencies, for the purposes of securing better co-ordination of National, State and local finances (1) by eliminating, as far as possible, burdensome and unfair double taxation and other inequalities that hinder the proper conservation of natural resources and impede the sound development of agriculture, industry and commerce. (2) by assigning to the National, State and local jurisdictions those sources of revenue which are relatively best suited to each from the standpoint of (a) convenience and economy in the administration of public finances, (b) uniformity of tax levies;

"5. Continuing the conferences of this group and the organization of similar State and local groups, representing all tax-paying interests (a) to study specific and various phases of tax problems, especially the general property tax; (b) to affect retrenchment and economies in the costs of Federal, State and local government; and (c) to awaken tax consciousness on the part of the people generally."

The Organization Committee, composed of representatives from each of the participating groups, will call further conferences to carry out this work.

The following organizations were represented at the Conference:

The National Association of Real Estate Boards, National Association of Manufacturers, National League of Women Voters, American Electric Railway Association, American Civic Association, General Federation of Women's Clubs, National Electric Light Association, The National Grange, The U. S. Chamber of Commerce, American Bankers Association, and the Bureau of Agricultural Economics of the Department of Agriculture.

The fact that such diversified groups, representing such large tax paying interests, agreed on steps that contemplate new budgeting and supervising of all government expenditures, and the distribution of costs of government services, to catch those people not paying for such services now, is regarded as significant.

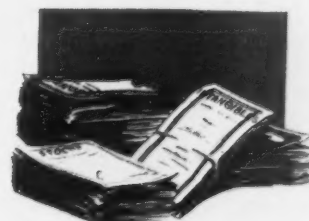
Throughout the nation generally there are now being carried on active campaigns for organizing property owners and builders into effective groups for combating wasteful governmental practices and unfair taxes on real estate improvements. Eighty-two cities to date have completed such organizations. At the same time, progress of a state-wide nature is noted in twelve states, as follows:

*Pennsylvania, New York, Virginia and California* have eliminated any direct state tax on real estate. *Ohio*, by a constitutional amendment which goes into effect December, 1931, has provided for the classification of intangibles for tax purposes. It has put a constitutional limit of 15 mills on the tax rate on real estate. *Tennessee*, by an act which went into effect December, 1930, has provided that no ad valorem or general property taxes,

To Every Owner of Real Estate ...  
An Invitation and a Program



Half our wealth is real estate. This half pays 80 per cent of local taxes



Half our wealth is personal property and intangibles. This half pays only 20 per cent of local taxes

Let's Have  
**FAIRER  
TAXES**

Sample of Folder Being Used in the Work of Organizing Property Owners' Divisions of the Real Estate Boards.

except school taxes, shall be levied for state purposes. It has adopted a tax of 5 per cent upon the income from intangibles. *North Carolina* has pending a proposed constitutional amendment to permit modernization of its tax laws. *New York* has created a state commission to form a plan for modernization of tax laws. *South Carolina* will vote on a constitutional amendment to make provision for the classification and segregation of property for tax purposes. *Washington*, by a vote of its state legislature, has submitted to the people of the state a proposed amendment permitting a more equitable classification of property for tax purposes. *New Jersey and Utah* have proposals pending to provide for classification of property for taxation.

# Factory-Built Houses

**New York Architect Urges Mass Production of Dwellings, Claiming that Standardization Will Cut Home Building Costs 50 Per Cent**

**S**TANDARDIZATION of home building by the same mass production methods that have given the worker cheap shoes, ready-made clothing and better automobiles at lower cost is the economic solution of the housing problem, according to Grosvenor Atterbury, New York, architect and city planner, who urges the organization of a research institute of economic housing to further the quest for better and cheaper housing.

Mr. Atterbury's ideas are outlined in a report on "The Economic Production of Workingmen's Homes," published Feb. 12, 1931, by the Regional Plan of New York in connection with its studies on housing and reported in the *New York Times* of the next day.

Mr. Atterbury declares that a few years of concentrated research in laboratory, shop and field, leading to standardization and factory mass production, would eventually cut the cost of building the simplest types of housing by 50 per cent and permit, with proper street planning, construction of houses renting for \$5, \$6 and \$7 a room.

## Stresses Long Island Experiments

Mr. Atterbury based his figures partly on actual experimental results achieved at Forest Hills Gardens, where nearly forty houses were built from standardized factory-made sections. It was found that a factory-made section of wall 9 feet high, 15 feet long and 9 inches thick after being put in place cost \$45, including overhead charges, as compared with a cost of over \$85 for a brick or terra cotta section of the same size. Walls, floors and roofs could be built of a variety of standardized units. The great difference, says Mr. Atterbury, is found in the appalling waste involved in the current methods of constructing homes.

While productivity in the automobile industry has increased 172 per cent, Mr. Atterbury points out, productivity in the housing industry has actually decreased—in some of the housing trades nearly 50 per cent.

## Rejects Philanthropic Subsidies

"Strangely enough," he says, "it is difficult to name a practical art which throughout all the centuries of man's civilization has made slower progress than the art of home building. We are still using the little brick, the hand unit with which they built the walls of Jericho, and laying them today probably far less cheaply."

Disagreeing with those who say that in order to solve our housing problem we must eliminate the profit motive, Mr. Atterbury holds that subsidy by philanthropists or by the State "will prove but a well-intentioned gesture and only delay the economic solution of the problem—the only cure."

The research institute proposed by Mr. Atterbury, would "stimulate, co-ordinate, concentrate and direct the national will and effort toward a scientific solution of the problem." It would, he says, combine the efforts of the best inventive genius available and the best experience and ability in other divisions of the problem with the necessary opportunity, funds and equipment. If possible, he suggests, it should be privately endowed in connection with some great educa-

tional institution to assure continuity of effort in an atmosphere free from any political or individual interests. If no other agency can be found to do the work, he adds, the city should undertake it.

## Factory Production Urged

Factory production of houses, the report continues, would mean more employment in the housing industry rather than less. While organized labor looks askance at the employment of labor-saving devices, the supplying of the demand for workmen's homes would, in his opinion, mean the birth of a new industry, the manufacture of economic homes and the present intermittent labor would be replaced by continuous all-the-year-round work "with an enormously increased field for labor and an efficiency justifying high wages."

"Under the existing antiquated building methods mechanics at \$12 and \$15 a day can never produce a small house that is worth the money it costs," he says. "It is a 'poor buy' even if the laboring man has the money to pay for it. Even at cost it is poor value compared with food and clothing—and many of his luxuries! The rich man, perhaps, could afford to pay for the waste included in the price. The poor man most certainly cannot and it is doing him a questionable service to help finance such a proposition."

"On the other hand, cut the cost by scientific factory production and offer him a really good bargain, well-designed, fireproof and substantial, involving but a small fraction of the ordinary upkeep of the present so-called low cost houses, and you will open up a market even greater than did the original Ford motor car. As in that industry, in spite of labor-saving devices and methods—really because of them—there will come an enormous increase in the labor employed as well as the opportunity for the laboring man himself to make a really wise investment within his means. In which case the various plans to facilitate his ownership of his own home will be good business for everybody."

## Editorial Comment

In the same issue the *New York Times* presents editorially this searching review of Mr. Atterbury's paper:

"No one who looks about can fail to be struck with the comparatively slow progress that has been made in the housing industry. Transportation has made immense strides since the day of the wheelbarrow and the cart. It is a long way from the signal fire to the telephone. Our ancestors would not recognize some of the foods we eat today—particularly for breakfast. They would be amazed at our commercial skyscrapers with their steel frames. But they would find nothing particularly novel about the construction of our homes. The trimmings may be modern, but the fundamental processes and materials have come down to us through the ages. Invention and mass production, so headlong in their course in other industries, have swept past home-building."

"If the principal processes of house-building could be transferred from the field to the factory, it would reduce the cost of construction, put the industry on an all-the-year-round basis, secure the benefit of highly skilled design and greatly stimulate home ownership."





MOTT STUDIOS

E. A. EDDE, Designer

## Homes of Winsome Appeal

The "secret" garage doors with covering of stucco to match the surrounding wall; all hardware is concealed and lattice strips cover the joints, while a seat and climbing vines which swing with the doors complete the illusion.

The windows interpret the medieval spirit to a marked degree; small in size, of irregular placement, divided by mullions and transoms into small sections and leaded throughout.



### **Residence of Mrs. L. C. Hunter**

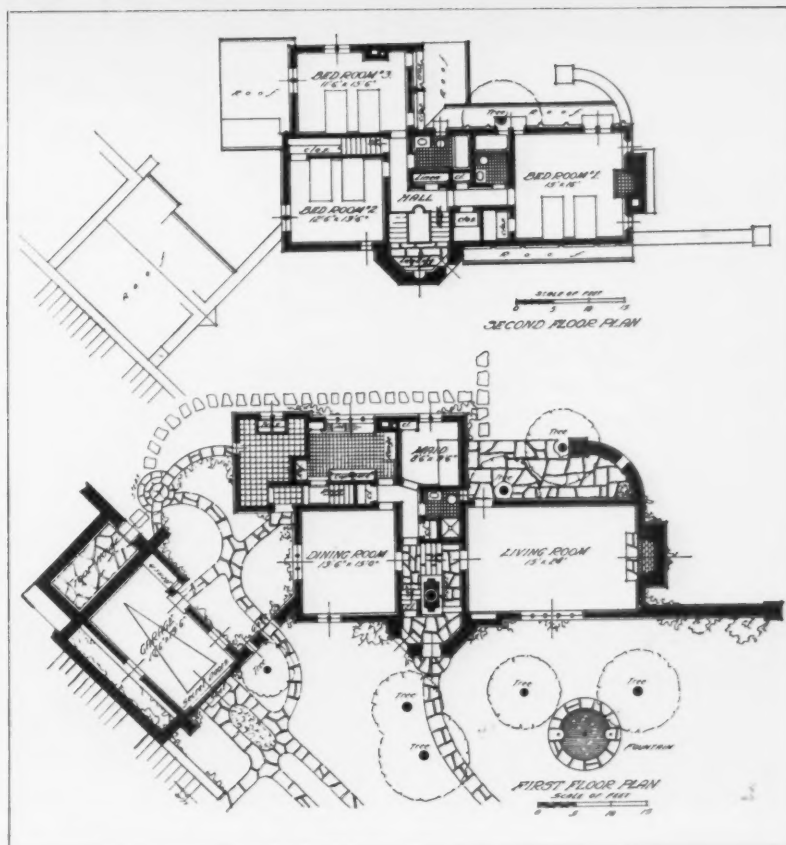
The enchantment of Medieval Architecture sways the human emotions—the mystic qualities suggest romance, life and adventure—there is a strong and independent vein that runs through all work of this type; with a background rich in coloring and intricate in pattern it reflects the release from restraint and convention. It has a very definite character that amounts almost to "vibration" when held in comparison with the conventional styles of classic origin or adaptation.



DUNCAN HUNTER, Architect  
PATRONO BROTHERS, Builders

## Medieval French in Character

The house of Mrs. L. C. Hunter at Fieldstone, N. Y. City, is a simple adaptation of the Medieval French type. A romantic setting amid forest trees and rocks gives the necessary natural flavor; simple masses and the spirit of hand craftsmanship preserved throughout, together with constant supervision on the works in preference to "paper execution" in the office account for its strongly individual character.

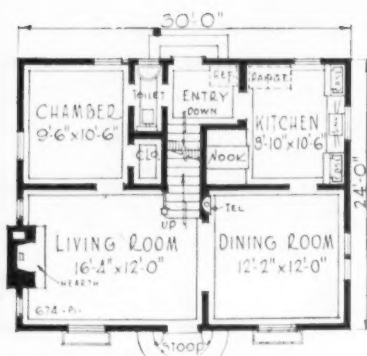




## Economy Neatly Clad



NATIONAL PLAN SERVICE Designs

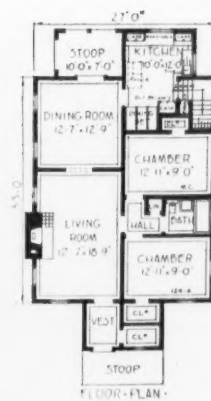


FIRST FLOOR



SECOND FLOOR

Two Charming Little Homes —  
Planned with Taste, Arranged for  
Comfort and Sized for Thrift—  
They Are Making New Friends  
Every Day.



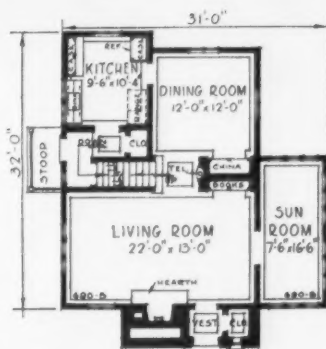
FIRST FLOOR PLAN



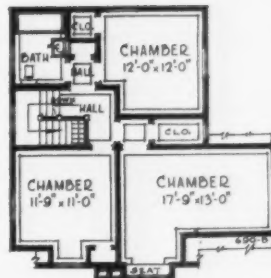
## Styled for Young Moderns

NATIONAL PLAN SERVICE Designs

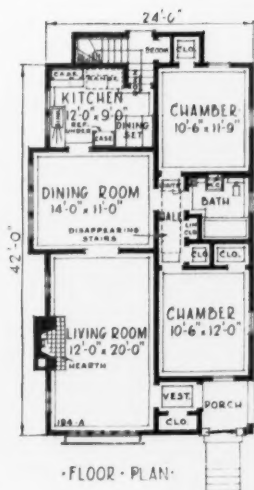
A Bungalow and an English Cottage in Tune to the Ideals and the Needs of the Present Generation—Hospitable, Cheerful, Step-saving!



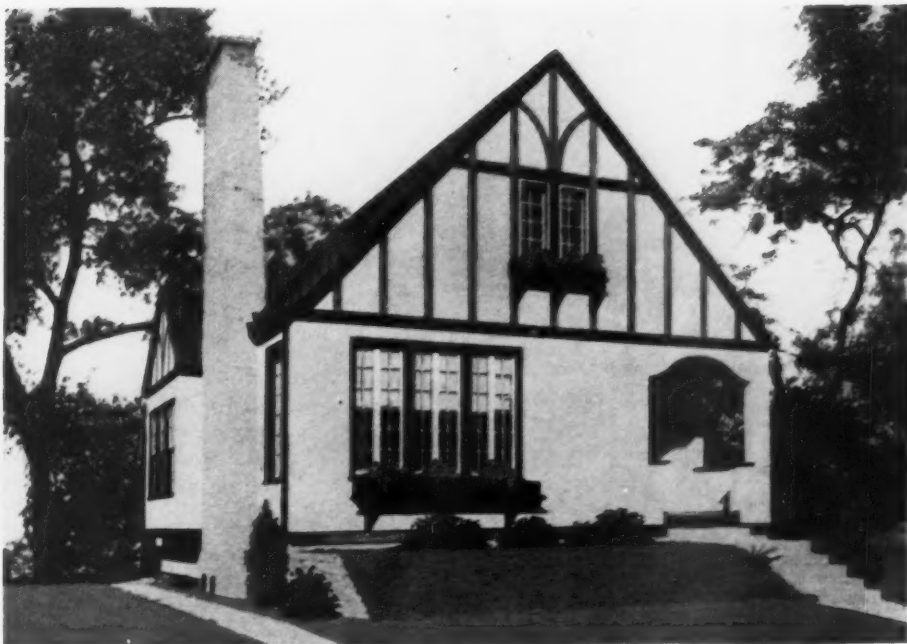
•FIRST FLOOR



•SECOND FLOOR



•FLOOR PLAN





## Modified Spanish

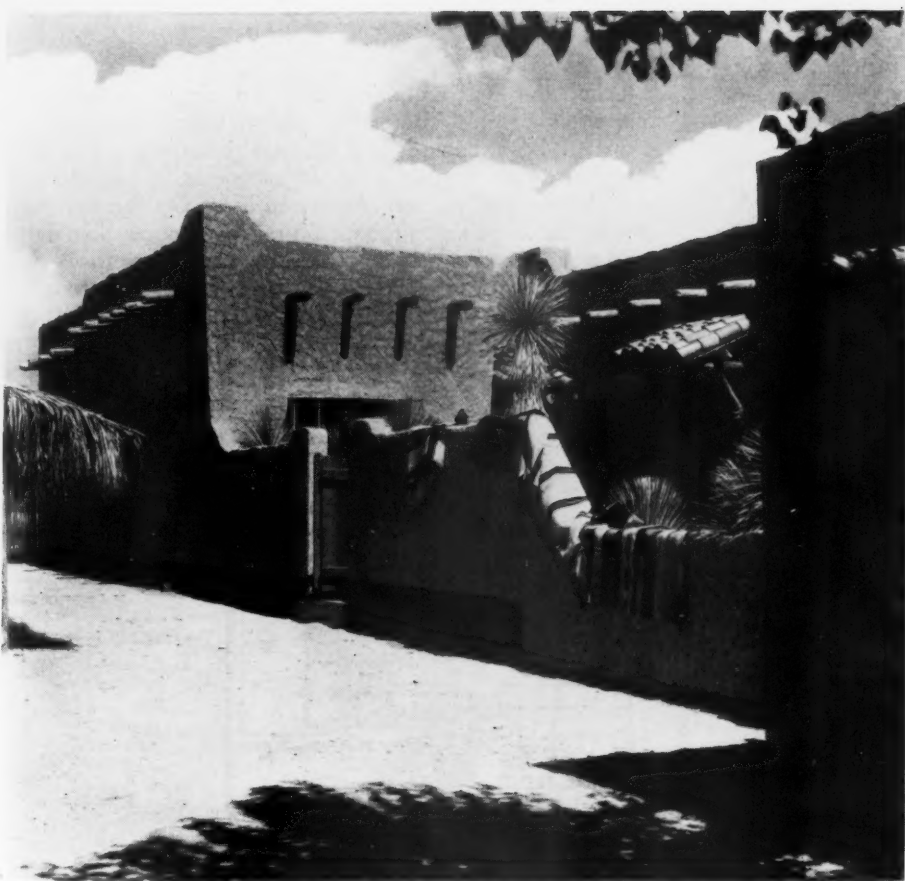
Houses and wall construction on these pages are typical of those popular in Arizona and the Southwest, where stucco exteriors in shades of pink, brown, gray, and green are effective to provide color in a semi-desert country.

Above is shown the entrance gate to patio of residence of Harold Bell Wright, novelist, near Tucson. The patio is very necessary; a type often seen is the one shown at the right, in the residence of W. E. Gurnee, Tucson.

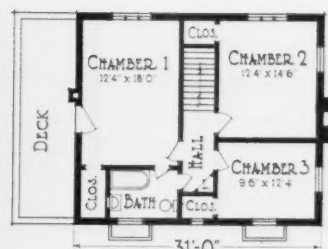




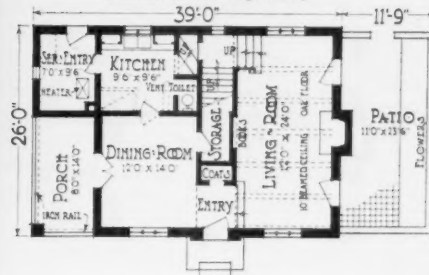
W. B. WINCHESTER, Architect



## From the Old Southwest



SECOND FLOOR PLAN



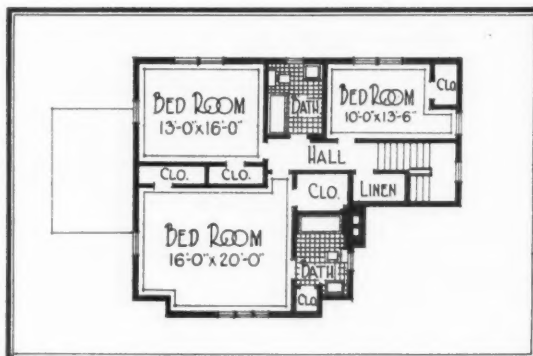
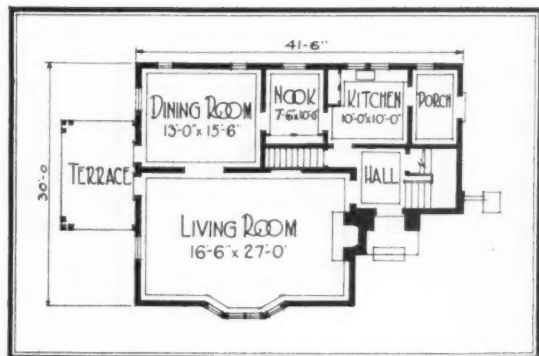
FIRST FLOOR PLAN



LINCOLN MORTGAGE CO., Architects and Builders

### English and Norman Influence Here

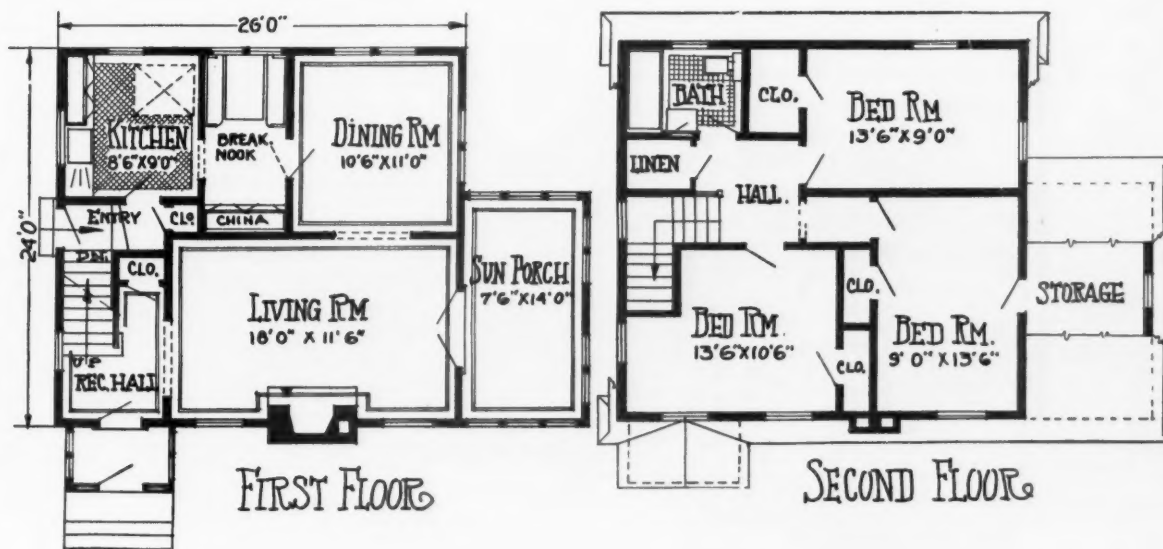
Stucco and half-timbering are the simple construction materials of this interesting design which shows indications of both English and Norman influence. The floor plan, however, reveals a layout of rooms in keeping with the demands of modern American life. On the first floor the rather large living-room with its bay window dominates, and opens on one side on to the covered terrace. A door opposite leads into the entrance hall. Connecting the dining-room and kitchen is a breakfast nook, and the light, enclosed service porch provides additional space for the necessary kitchen equipment and supplies. On the second floor are three airy bedrooms.





This home of wood construction presents a flexibility in design which simplifies the task of producing an attractive and architecturally correct dwelling at moderate cost. Such houses as this are typical of the homes that are being built in every city throughout the country by those people who appreciate good architecture but are possessed of only average resources.

### Compact and Inexpensive







Five Exteriors. All fit the same convenient floor plan.



National Plan Service Designs.

## SUMMER COTTAGES

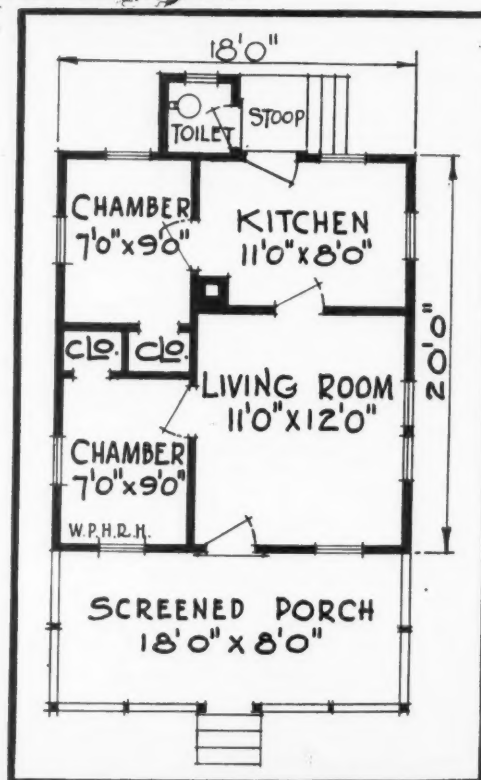
### Plan Them NOW

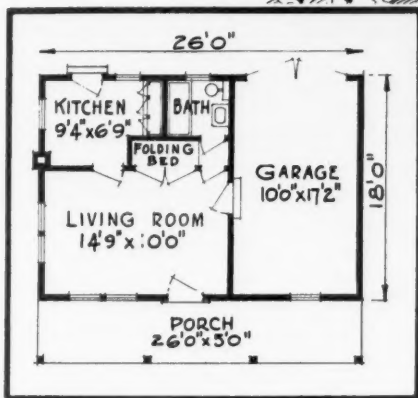
The out-of-doors will soon be calling—summer homes are to be planned and built! Builders and their clients now get out the fishing tackle and the blue prints.

Consider the vacation cottage,—whether it is nestled within the green of the woodland, caressed by the water's gentle breeze, or gracing the balmy countryside, wide in colorful beauty—there it is you will find an abode of happiness, rest and comfort.

Why spend the long, hot days and sultry nights in the city, when less than an hour's motoring brings you into the cool, sweet-smelling air?

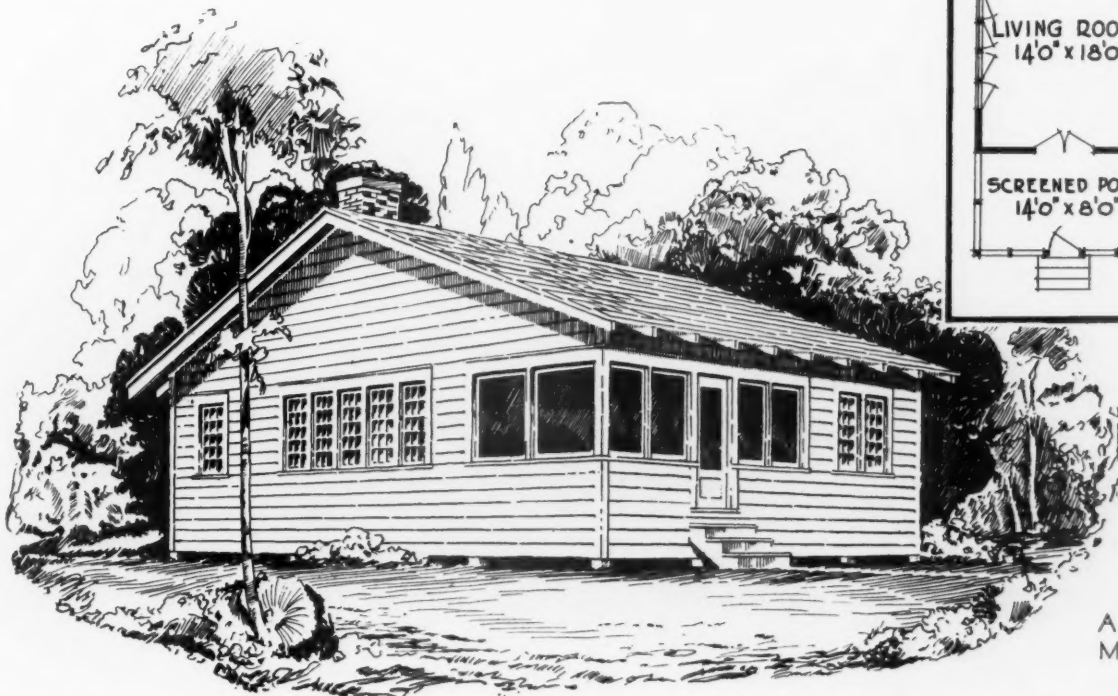
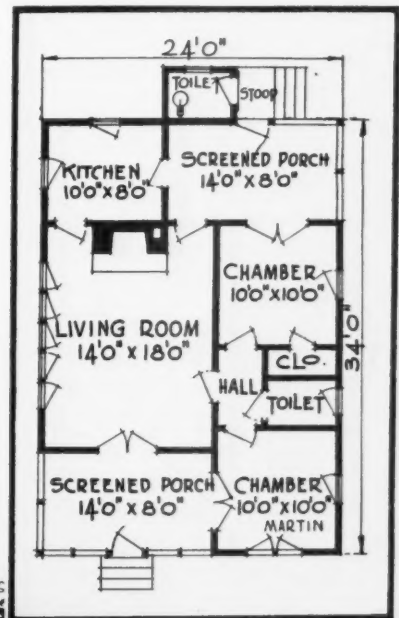
A summer home to be comfortable and substantially built, need not be costly—in fact, the exceedingly nominal cost is most surprising. The designs presented offer a selection.





Front and Rear Views of This Little Retreat, Complete with Built-in Garage.

**By Lake,  
Mountain  
or Woodland**



A Popular Model in  
Many Various Ar-  
rangements.

# "ALLWOOD," A New City

## Over 4500 Homes and Other Buildings

The Outstanding Building Development of 1930 Is That of

"ALLWOOD," NEW JERSEY

developed by

Charles H. Reis, Inc.

The story of its start July, 1930, and the building and sale of the first 100 houses by December, 1930, is told in this article.

THE year 1930 was a poor one for business in general and exceptionally so for building developers. It is unusual in such times to find men willing to go ahead with a gigantic house building program, especially so when the houses produced are to be sold at a moderate price to those with moderate incomes. It was generally supposed that the middle classes would be the ones to withhold all purchasing until the country was again on a better financial footing.

It takes keen insight into human nature to figure out just how a certain portion of the public will react towards home buying. Charles H. Reis, Inc., has had considerable experience in selling moderately priced homes. The successful marketing of Sunshine City—a group of 1,000 homes situated at Woodridge, N. J., was described in the September 1930 issue of AMERICAN BUILDER.

Despite the depression these developers considered it wise to go ahead in 1930 with a new development; and that they were right is evidenced by the prompt sale of the first 100 houses erected at "Allwood." The creation of this development will stand out as one of the bright spots in 1930 home building history.

The nucleus of the Allwood property was obtained by purchase of a 300 acre tract owned by Brighton Mills, Inc., which moved its plant to Georgia. This plant was situated in the small town of Allwood, a suburb of Clifton, N. J. Several through highways cross the property and there was also a railroad station, church and schools in the town besides a number of small houses for the



Marlboro Road While Under Construction Was a Mecca for Interested Visitors. This picture was taken before any of the "Model Home" opening days or before any advertising appeared. The reinforced concrete street and curbing have not yet been placed.



# City of Homes in the Making

## Buildings To Be Erected in This Development

mill hands. The vacant property purchased was held by the mill owners for future expansion but changing conditions made it advisable for them to seek a southern location for manufacturing. It is the expectation that the large factory building will be sold or leased to some manufacturer.

To this 300 acre tract Charles H. Reis and his partner, Newland C. Prior, added 200 acres acquired by assembling parcels of surrounding farm land. The property includes rolling countryside, orchards and wooded sections. From many of the hill top locations the towering buildings of New York City are visible. Adjoining the property on one side is a large country club.

Property was bought for part cash, the balance on a five-year mortgage. The release of the land from the mortgage was fixed on a square foot basis, street and park areas to be released without cost upon filing of maps with the county authorities. The amount of land released with each payment was carefully calculated so that by the time the entire amount of the mortgage is paid, two-thirds of the land will already have been released.

On July 5, 1930, the First Power Shovel Came on the Job. Charles H. Reis is at the controls while Newland C. Prior looks on.

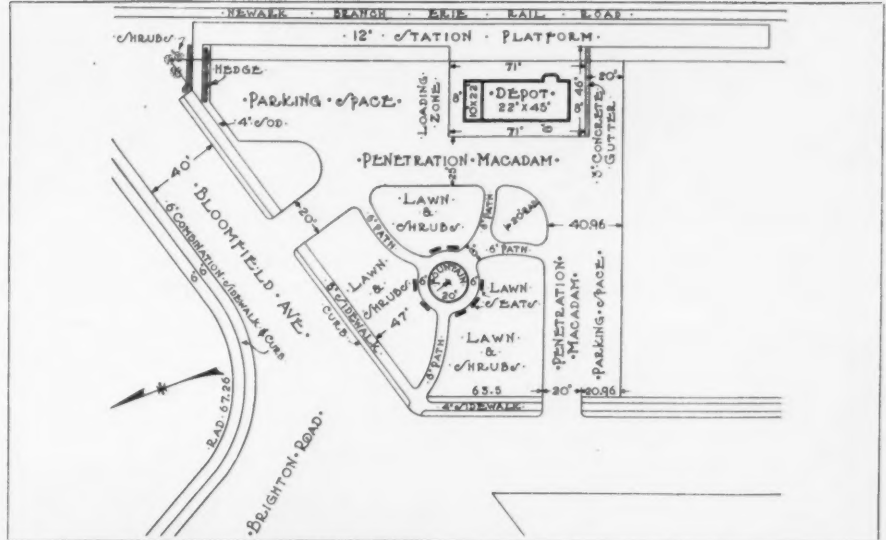


Diagram of Allwood Railroad Station and Its Vicinity. Note the liberal space allotted for car parking.



Two title companies were employed in the search, not only to check up against each other, but to have two companies available to make mortgages without search delays.

The first step, of course, was to plot out the land. The residence streets were located so that they would be easy to reach from the existing highways and the railway station. As it is planned to have over 4,500 houses on this tract, it will house a population of about 18,000, so a business center would be required and a recreational center would be a desirable adjunct.

All residence streets are planned to be 50 feet wide and paved with reinforced concrete 7 inches thick, also curb and sidewalk. Every house is to be set back from the curb 35 feet; this will insure a distance of 120 feet between building lines. Every house will have a built-in garage. Practically every plot will have a frontage of 40 feet and a depth of 100 feet. The restrictions call for no out-buildings, fences or other structures ex-

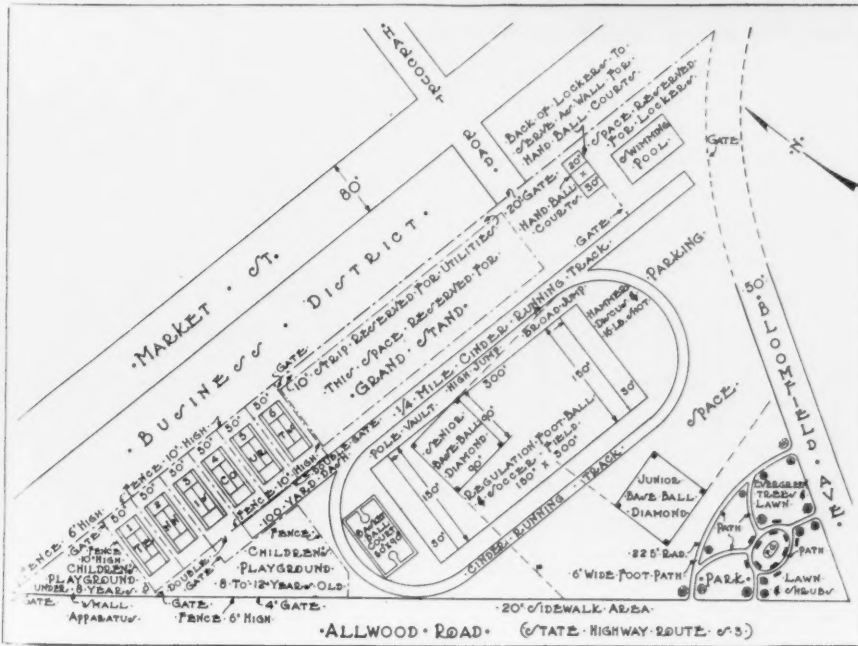
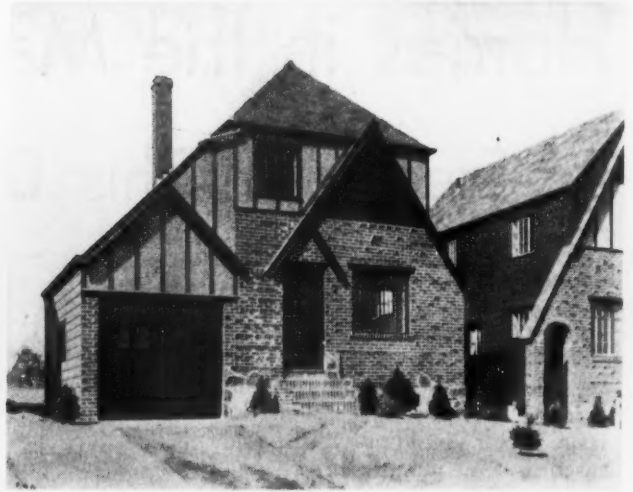


Diagram of Recreation Center. This adjoins the rear of the business section to be placed on Market Street.



There Is No Mistaking the Sales Price of This Six-Room House as It Is Prominently Displayed on Large Sign. Note the difference between these five-room house plans shown below and those of six rooms opposite.



A Good Crowd Always Assembled at the Opening of One of the Sponsored Model Homes. A mass-buying state of mind was created in these prospects.

cept the house on residential plots. Thus there is a garden space in the back of each house 40 feet in depth or an 80 foot strip of park area in the rear of all houses. Naturally every tree on the property will be preserved if possible, others will be relocated or new ones planted.

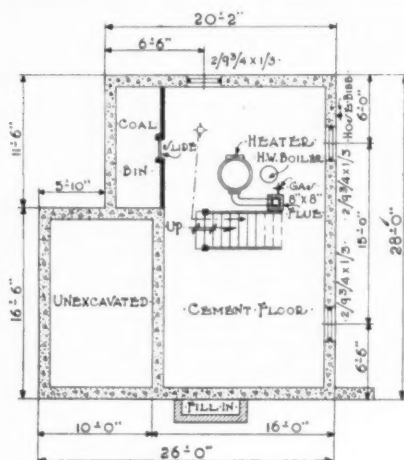
About a seven-acre plot has been set aside for a recreation park and in addition, park spaces will be arranged around the new railroad station to be built by the developers. The arrangement of these park spaces is indicated on the survey presented herewith.

The business center, called Market Street, 80 feet wide, has already been laid out and is of reinforced concrete sufficiently wide for four lanes of traffic; and the rest of the roadway on either side of this strip is of macadam, which will serve for parking space.

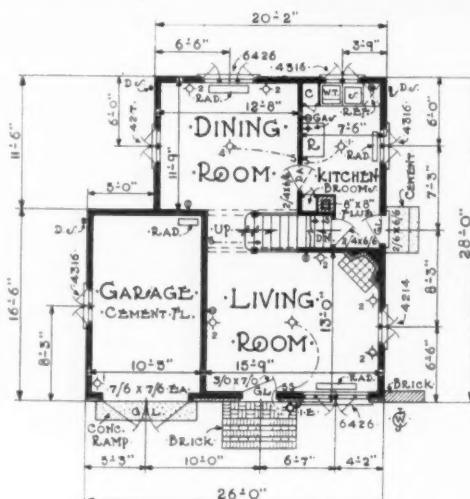
The houses to be erected will vary in design, in fact where desired they will be built to order. Although 40



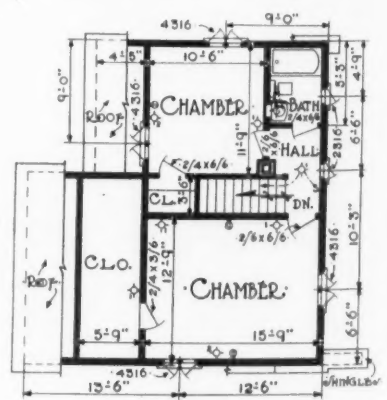
A Close-up View of the First Section of Market Street Buildings Already Erected. Note the modernistic note in these terra cotta store fronts.



• CELLAR • PLAN •



• FIRST FLOOR • PLAN •



• SECOND FLOOR • PLAN •



Two Exterior Views of Six-Room Houses Are Shown in Above Pictures. Dutch Colonial and English precedents were the models for these two home designs. The arrangement of the six-room homes is illustrated below.

feet was set as the frontage of most of the plots, additional space will be sold at the rate of \$50 per front foot to anyone wishing more land.

July 5, 1930, was the day that physical work started in this development. A large steam shovel began clearing for the first street and the cellars for the 100 houses to line both sides of it. Two basic floor plans were used, one for five rooms and bath and the other six rooms with two baths. A number of the exterior designs were used to create variety.

Water, gas, electricity, telephone, and sewers have been all provided so that the dweller here will enjoy these conveniences of city life. In addition, mail is delivered,



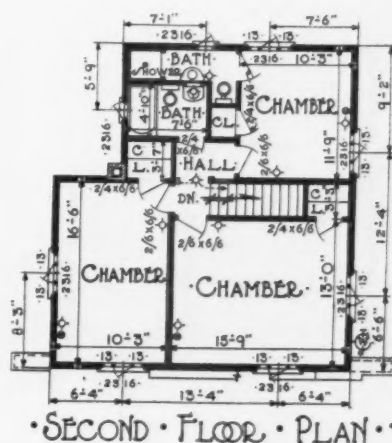
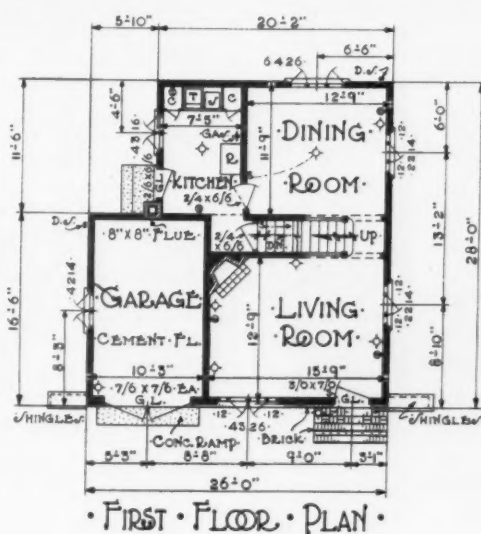
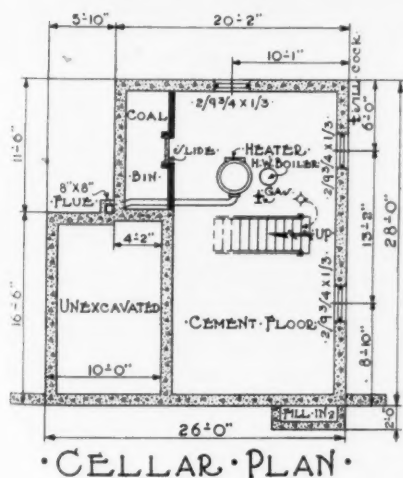
Flood Lighting Played an Important Part in Creating Good Will at Night, Illuminating Not Only the Houses But Also the Sign Telling the Selling Story.



In a Few Years This Wide Concrete Paved Market Street Will Be Lined on Both Sides with Stores and Be the "Gay White Way" of the New City.

fire and police protection provided and transportation is easy to different surrounding northern New Jersey cities as well as to New York.

Since automobiles have come into universal use, the garage has been made a part of each house. This is cheaper than building a detached garage, improves the house appearance and provides a heated garage, a fea-







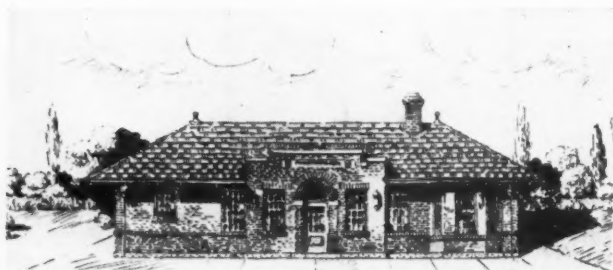
On the Steps of This Model House Reading from Left to Right Are P. J. Jossier, the Architect of the Allwood Buildings; Charles H. Reis, and Newland C. Prior, Officials of the Development Company, and Russel S. Wise, Civil Engineer, Who Is Laying Out Allwood.

ture thoroughly appreciated in the winter time when cold motors are so hard to start.

In launching a development project of this size, one of two model homes would not attract much of an audience, therefore the first move in creating Allwood was to construct one street as a model so as to form a sort of show window. The houses illustrated in this article are on this model street. Work will begin again this spring in creating other streets, and the program continued for seven or eight years until the entire tract is built up.

Buying was done in large quantities and advantage taken of cash discounts. By maintaining a large organization of skilled workers every cost-cutting method of erection is employed so as to produce the most house for the least amount of money.

Much efficiency was obtained by setting up teams of men who do only certain specific work. This tends to make the men experts in their own particular line and it is easy to check up on their daily production. A general superintendent is employed to look after the construction.



Sketch of the New Allwood Railroad Station to Be Built in 1931 by Charles H. Reis, Inc.

He has a number of assistants and for each group of men a foreman is provided. Union labor is employed and the five-day week observed.

Accurate accounts are kept so that costs are known. In addition to the cost records various forms are used for keeping records of sales promotion efforts and the handling of customer accounts until the time of closing.

The Reis organization is fortunate in having a selling method developed whereby a complete house is offered at one fixed price and the second mortgage carried until it is fully paid.

Under the one-payment plan adopted, the home purchaser simply makes a down payment of \$950 on the \$7,950 house and then pays \$75 per month. This monthly payment covers the interest on the \$4,800 first mortgage, interest on the \$2,200 second mortgage, taxes and insurance, while the balance goes toward reducing the second mortgage.

Interest is charged only on the unpaid balance of the second mortgage, which reduces each month; this method continues for approximately six years when the second mortgage is fully paid, leaving only the first mortgage interest and taxes. The first mortgage is for three years with a Title Company and is renewable.

## SPECIFICATIONS

### Of Advertised Products Used in Allwood Homes

- |   |  |
|---|--|
| Lavatories, toilet combinations and sink and tray combinations. Shower receptors—supplied by Ford Porcelain Works, Perth Amboy. | Built-in ironing board in kitchen. Shower curtain.                           |
| Standard Sanitary Manufacturing Co.—Pembroke Tubs.  | Maltese Cross siding 100% clear.   |
| Republic Brass Co. shower fittings and bath fittings.   | Concrete floor in garage and apron.  |
| 20 gallon Chief Hot Water Heater—semi-automatic.  | 1 1/4" Maple drain board around sink.  |
| Steam fittings—Essex Foundry Co.  | "Easy Draft" Heat Regulator.   |
| Junior excelso auxiliary water heater on boiler.  | Footings and cellar floor—no ashes used—mixture of cement, sand, and gravel. |
| Copper tubing both hot and cold supplied by American Tube Co.   | 12-inch concrete blocks tested by Haller Testing Laboratory.                 |
| Ohio Brass radiator valves.   | 2" x 10" floor beams Fir.  |
| Indiana Brass Co. Brass fittings.   | 7/8 inch Select No. 1 Oak floor in every room.                               |
| Richardson and Boynton or American Radiator Co.—steam heating plant and radiators.  | Eastern Canadian Spruce Lath No. 1.  |
| Aluminum Co. of America—leaders and flashings.  | Monument Stucco.   |
| Truscon Steel Co. steel sash and metal screens.   | Adamant sanded brown plaster.  |
| Hoosier scientifically arranged special Kitchen Cabinet.  | Hi-Speed lime.   |
| Ready Built Products Co. fireplaces.  | Tiger finishing lime.  |
| Consolidated Batten front door and garage doors.  | Lehigh-Portland Cement.  |
| Kelly cork insulated fire proof boards in garage and closets.   | Steeltex wire lath behind Stucco exterior.                                   |
| GE electrical wiring and switch-boxes.  | Duracolor side wall shingles.  |
| National outlet boxes.  | Stanley & Patterson, Inc., Electrical fixtures.                              |
| Flintkote Giant asphalt roof shingles.  | Truscon Metal door bucks.  |
| Cliffside Iron Grill railing for main stair.  | Sisalkraft paper around windows.   |
| Black Diamond wire lath behind tile.  | Dexter locks with Bakelite hardware—National Brass Co.                       |
| Truscon Metal corner beads on all exposed plaster corners.  | McKinney Butts.  |
|   | United Metal Box Co. clothes hampers and cabinets.                           |
|   | L. & H. all enamel gas range.  |
|   | Cambridge-Wheatley Colored Tile in bath.                                     |
|   | Fairfax bath room fixtures.  |
|   | Richard E. Thibaut Wallpaper.  |
|   | Pratt & Lambert floor varnish.   |
|   | Sealex Linoleum supplied by Congoleum-Nairn Co.                              |



Typical Interiors of Allwood Homes  
—View of Living Room.

The one payment plan adopted eliminates uneven payments and does away with the sometimes excessive renewal rates on second mortgages and reduces the number of delinquent accounts and foreclosures. Regarding this, Mr. Reis said:

"When we offer a home with a cash down payment of \$750, \$950 or \$1050, depending upon its price, a purchaser in calculating his cash outlay will not be deceived by unknown or unexpected additional cash outlays for essentials, which,



View of Dining Room Looking Toward Living Room.

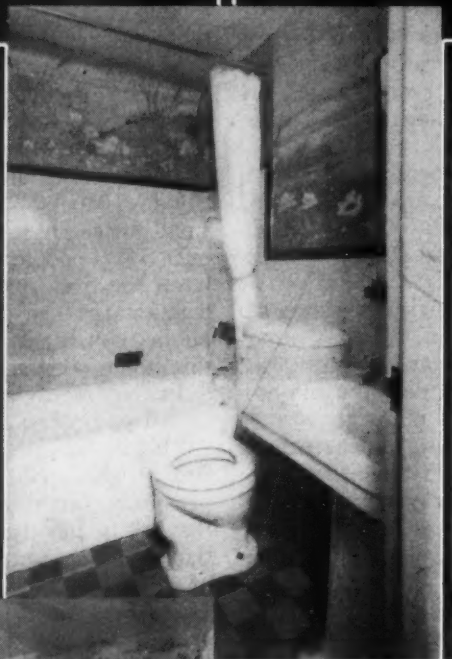
in a great many homes, are not to be found. It must be borne in mind that the first year or two years of home ownership are the most difficult. When a purchaser has successfully carried his home over a two-year period it is reasonable to assume that no trouble will be forthcoming. Therefore, if during the first two years the purchaser is to be embarrassed with a cash outlay for a garage, runways, assessments for street improvements, shrubbery, screens, decorations and other incidentals, he is being placed in a position that will seriously affect his ability to carry on.

"Every purchaser sets up a budget within which he can carry his commitments. When funds must be taken in excess of this budget, it ceases to function as such; and he becomes more and more delinquent in his payments, which eventually pile up so as to make any further carrying on unprofitable and unwise. In our experience we have found that the more complete the product, that is, the home with its necessary accessories, the less the chance of foreclosure."

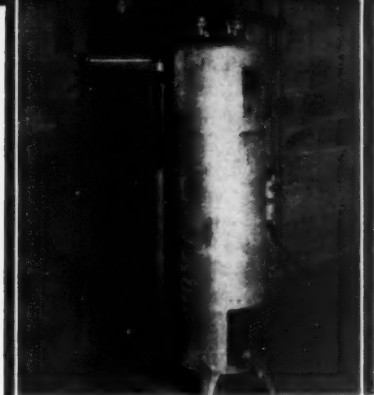
The first mortgage for three years is obtained from a title company or from a large insurance company and is renewable. When the second mortgage is paid off the purchaser has the privilege of either continuing with the first mortgage or having a building loan association carry the loan which, of course, is repayable monthly for a period of over 11 years. Thus, the buyer has approximately 17 years in which to make payments for a house, making monthly payments as small as possible.

Excellent Fixtures,  
Linoleum Floors  
and Tile Wainscot  
Make a Very Attractive Bath.

View of Kitchen  
Showing Efficiency Cabinets,  
Sink and Range.



The Concrete Block Walled Cellar, Showing Heating Plant and Hot Water Supply System; Note the Copper Tubing for Water.



The next step was the actual selling of the houses. The first procedure was to get the public acquainted with what was being done. This was done through an intensive campaign of publicity and advertising directed by the United Service Advertising, of Newark, N. J.

The first step was to prepare an article giving the story





One of the Allwood Sign Boards Placed at Prominent Points Along Principal Motor Highways.

of a project which would put an army of men to work in the creating of an ambitious project despite a hard-time year. This article was sent to various newspapers and news associations as a story cheering in times of depression. It was published in full or commented on by practically every newspaper in northern New Jersey and New York City.

This first story was followed by others; and then a luncheon was arranged for the various real estate editors, at which the story of Allwood was outlined and each guest received a complete set of literature giving the story of Allwood.

This publicity was timed to coincide with the start of operations at Allwood. From the time the first story appeared consumer interest was keen, and even though not a line of advertising had been used people came out in crowds to view a new town in the making.

Preliminary to ordering the advertising it was necessary to determine the market from which future families would be drawn to Allwood. Then various newspapers were selected as advertising mediums. Newland C. Prior, the vice-president of the company, who has charge of the advertising, stated:

"Our past experience has taught us that to sell houses it is as important to advertise as it is to have houses to sell. In the long run it takes personal salesmanship to put over actual sales, but advertising is first needed to create in a prospect's mind some degree of acceptance and confidence even before he sees the house."

The first preliminary advertising was done on rather a lavish scale; there were 100 houses to sell in 1930, but the profit on these did not justify the big outlay for the first advertising. These developers, however, knew the value of this advertising as a good will builder to establish the name of Allwood and create a feeling of confidence in the minds of thousands of prospective buyers.

The opening advertisement appeared in Saturday and Sunday papers—full pages in New Jersey papers and small space in several New York papers. On Sunday over 5,000 people came out to visit Allwood and the next week the first furnished model home was opened. This was arranged in connection with a Newark paper. The publicity created resulted in over 12,000 people attending this home opening.

In regard to how furnished model homes help as crowd gatherers, Mr. Reis stated:

"I will concede that such events bring out droves of people who could in no sense of the word be rated as prospects, but in amongst these there is always a group that ultimately become home buyers. It is, hence, true that on an opening day very little selling is done because of the prevailing excitement of milling throngs of people. It is also true that there is invariably created a certain sales momentum which shows itself with good results in the future."

Later a full page advertisement in colors was run in a New York evening paper. Such an advertisement for a low priced home was something that had never before

appeared in a New York newspaper and it attracted a good deal of attention. This advertisement appeared on a Saturday. The next day, Sunday, there was a steady stream of visitors from 10 A. M. to 9 P. M. visiting the various houses. This crowd was handled without any undue inconvenience and actual sales were made that day.

For weeks after many visitors stopped at Allwood due to seeing this advertisement. One of the homes had been completely furnished by a large department store and this model home was made the subject of this advertisement. Previous to its appearance, little items



The Advertising Folders for Direct Mailing Attractively Tell the Story of Allwood Homes.



to help public interest were inserted in this newspaper.

In addition to newspaper advertising a large circular or broadside in two colors told the story of Allwood and its homes. About 100,000 of these were distributed from house to house in selected areas or through the mail to prospects or handed to visitors.

When names are obtained from visitors who are likely to be prospects a series of four individual folders are mailed at intervals so as to keep up interest. These, of course, are followed up by a salesman's call.

Painted outside signs were located on various roads in select locations to carry the message of Allwood to the motoring public.

Advertising in a lavish manner also brought its own troubles in the way of undesirable curiosity seekers who visited the homes. It was soon found out that many desirable prospects were timid about something. They gave an "I'll come back later" answer and the trouble was soon spotted as being the sight of this undesirable element. They did not care to locate where their neighbors might be undesirable to them. Here was a problem that was going to seriously affect sales unless quickly remedied.

The solution of the problem was the creation of the Allwood Country Club which required an application to be filled out by every prospective buyer and only after complete investigation was a family admitted to ownership and membership in the country club.

This new feature was immediately introduced in all advertising and the restrictions of Allwood residence was stressed in the copy. Within a few weeks the situation was changed, the desirable prospects were again interested in a home locality that was properly restricted.

In regard to the sales force; a small staff of well trained men are employed, all are able to talk intelligently regarding the construction of the houses and able to give definite information to visitors. The average prospective home owner today is not so unsophisticated as to take everything for granted. Practically every newspaper and magazine during the last ten years has had something to say about home building. The public has been educated to the better things that can be obtained and they demand them even in houses that sell at a moderate price.

Although the business street is occupied by only four stores at present, it is kept well illuminated at night and the furnished model houses are flood lighted. This illumination always attracts crowds of visitors during the evening hours. It was originally tried out as an experiment, but as a number of sales were directly traced to it, it is continued.

AMERICA'S GREATEST HOME VALUE.

## Announcing The Opening of the

# NEW YORK JOURNAL MODEL HOME

in **ALLWOOD**  
*Adjoining Bell Home Colony  
 Overlooking Montclair*  
**Starting Tomorrow  
 10 A. M.**



**\$7,950**  
 REIS Custom-Built Homes  
 FURNISHED BY HAYNE & CO., NEWARK

**\$6950**

**\$8250**

AMERICA'S GREATEST HOME BUILDING PROJECT.....

Reproduction of the Full Page Newspaper Advertisement in Colors Which Was Run in the New York Evening Journal.

One of the sales force makes addresses before groups of men in business or industrial organizations, putting over the message of Allwood whenever possible. At each meeting they give out literature and many desirable prospects are secured in this way. This year the building of homes will begin on a large scale and a number of new streets will be developed.

As other builders held back their operations the supply of desirable small homes in northern New Jersey was being steadily depleted and as prices of materials were under normal Charles H. Reis, Inc., was able to do a very normal thing in a very unusual time; hence, this project made good in 1930.

**ALLWOOD** Building A City of 4,500 Homes For A Population of 18,000

**CHARLES H. REIS, INC.**

**PUBLICITY** **ADVERTISING**



The "Allwood" Exhibit at the Convention of New Jersey Realtors. This exhibit was awarded first prize for constructive publicity. It was prepared by United Service Advertising of Newark, N. J.



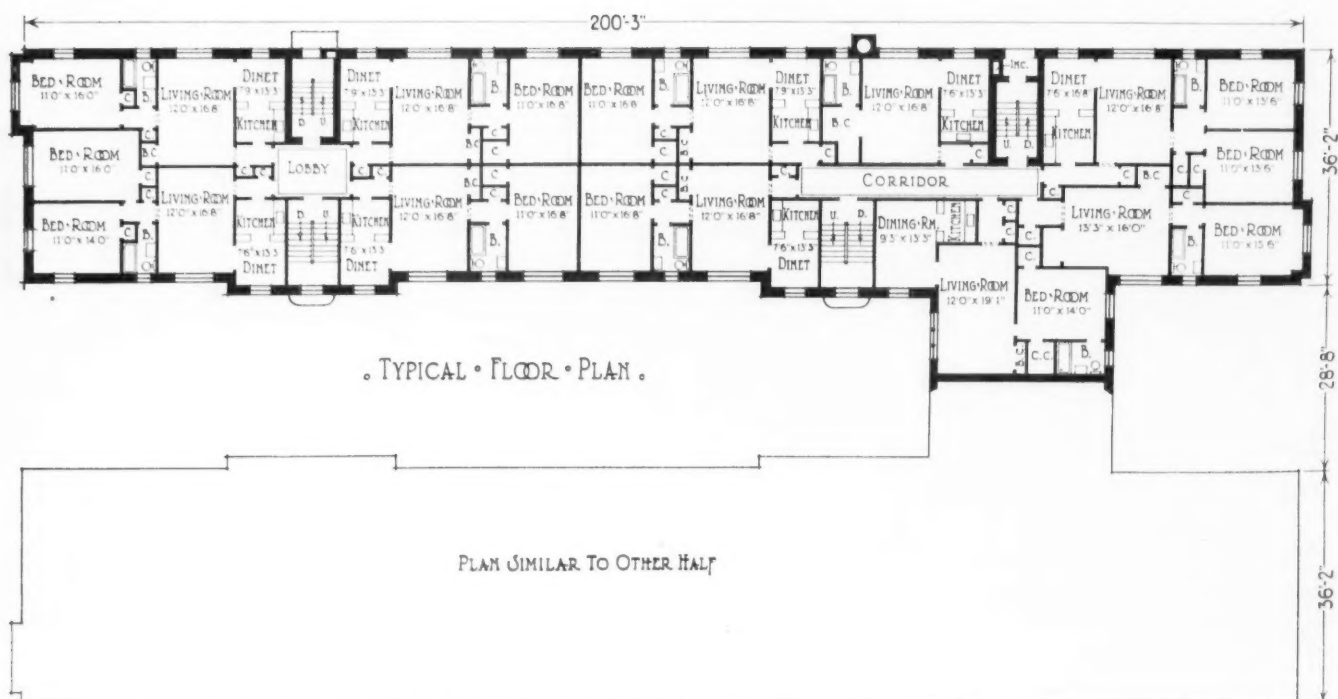
SALASIN &amp; FREED, Builders

J. ETHAN FIELDSTEIN, Architect

## Big Income Possibilities Here

The architect of the Bryn Mawr Gables Apartments at Bryn Mawr, Pa., has succeeded in arranging each floor of this U-shaped building into twenty well-lighted units, ranging from two to four rooms each. The building over all is 101 by 201 feet, the central court being 28 feet 8 inches wide. Four outside front entrances and stairway systems serve these units; there are a like number of service entrances and stairs. The building is four stories high; part of the ground floor space is used for heating plant, laundries and storage.

Apartment units so compactly and satisfactorily arranged bring high rentals, making the profit possibilities very large for a building of this type.



# How To Estimate Your Own Modernization Market

By E. L. GILBERT

Research Director, American Builder and Building Age

**E**STIMATING, in the building business, requires almost superhuman carefulness, a broad knowledge of the technical problems natural to every piece of construction, and the "patience of Job." This applies to the careful figuring of even a small cottage, in estimating the number and ages of existing residential structures for any given locality a rather complicated formula must be followed.

The Bureau of the Census has estimated that there are an average of 4.3 persons per family in the United States. Since housing requirements are necessarily based on the number of families, this is an important fact to remember.

Studies conducted in many localities have proved that each family has one home; although there are cases on record where seven or eight persons live in one home, there are other cases of many families who have two or more domiciles, such as a summer home and a winter residence. Consequently, for all practical purposes the number of families in any given section establishes the number of homes in that locality. It is easy to determine the number of homes in your locality by dividing the population figure by 4.3. For the purpose of estimating your local modernization market it is necessary to secure the census figures (at ten year intervals) as far back as possible. In figuring the modernization market for entire United States we have the following:

Year	Population	No. of Families
1830	12,866,020	2,992,100
1840	17,069,453	3,961,640
1850	23,191,876	5,393,460
1860	31,443,321	7,312,400
1870	38,558,371	8,967,063
1880	50,155,783	11,664,136
1890	62,947,714	14,639,003
1900	75,994,575	17,673,157
1910	91,972,266	21,384,248
1920	105,710,620	24,583,865
1930	122,698,190	28,534,463

It is to be noted that the above figures represent the total number of "home units" in existence by decades. By subtracting the total number of "home units" in existence in the year 1830 (2,992,100) from the total number of "home units" in existence in 1840 (3,961,640) we find that 969,540 additional "home units" were necessarily created during the ten year period 1830-1840. Using this simple method established the number of additional "home units" built in the United States during each decade of the past hundred years, as follows:

Number of "home units" in existence in 1830	2,992,100
Additional "home units" required 1830-1840	969,540
Additional "home units" required 1840-1850	1,431,820
Additional "home units" required 1850-1860	1,918,940
Additional "home units" required 1860-1870	1,654,663
Additional "home units" required 1870-1880	2,697,073
Additional "home units" required 1880-1890	2,974,867
Additional "home units" required 1890-1900	3,034,154
Additional "home units" required 1890-1900	3,034,154
Additional "home units" required 1900-1910	3,711,091
Additional "home units" required 1910-1920	3,199,617
Additional "home units" required 1920-1930	3,950,598

Total Number of "Home Units" In Existence Today.....28,534,463

The majority of residential structures erected during

the past hundred years were not so designed and constructed as to have a useful life of more than 50 years. A very conservative estimate of the rate of obsolescence and depreciation of residential structures has been given as two per cent per year. This means that the average residential structure is completely replaced at the end of 50 years. When it is considered that thousands of residential buildings are demolished each year to make room for new apartment houses, office buildings, theatres, etc., in addition to the annual losses by fire, flood, tornado and other disasters, as well as the "running down" of certain neighborhoods in practically all cities, this rate of obsolescence and depreciation is seen to be a conservative one. Besides the complete demolition of residential buildings as enumerated above, hundreds of millions of dollars are spent each year to maintain (through additions, alterations, repairs and modernization) structures which would otherwise have to be abandoned. Thus, a considerable part of the "modernization market" results each year in the building of new homes; this new building must be deducted from any theoretical estimate of annual modernization needs.

Extensive research, including the study of typical sections in various parts of the country, has revealed the fact that the law of obsolescence and depreciation operates according to a fairly simple formula. In the table which is given below it is shown that for every 100 homes built in 1830 (100 years ago) there are in existence today 32 homes less than 10 years old, 24 homes 10-20 years old, 18 homes 20-30 years old, 15 homes 30-40 years old, and 11 homes 40-50 years old. These figures, it is obvious, are really percentages; by applying this table to the figures secured for your own locality (as explained in preceding paragraphs) it is an easy matter to determine the ages of the "home units" in your locality. In using this table be sure to set up all first figures as in the *1st decade*; thus, for buildings constructed in the decade 1880-1890 (1st, in this case), use the figures of the *5th decade*, for 1920-1930 is the fifth decade following the period 1880-1890.

## OPERATION OF OBSOLESCENCE AND DEPRECIATION FACTOR IN REPLACEMENT OF "HOME UNITS"

Decade	Less than 10 yrs. old	10 to 20 yrs. old	20 to 30 yrs. old	30 to 40 yrs. old	40 to 50 yrs. old	Total
1st	100					100
2nd	20	80				100
3rd	24	16	60			100
4th	28	19	13	40		100
5th	33	22	15	10	20	100
6th	36	26	18	12	8	100
7th	26	29	21	14	10	100
8th	29	21	23	16	11	100
9th	28	23	17	19	13	100
10th	30	22	19	14	15	100
11th	32	24	18	15	11	100

Applying the above table to the numbers of "home units" for the entire United States develops the following figures:

No. of "Home Units" in Existence Today	Ages
10,919,348	Less than 10 yrs. old
7,229,217	10 to 20 yrs. old
5,307,833	20 to 30 yrs. old
3,230,078	30 to 40 yrs. old
1,847,987	40 to 50 yrs. old
28,534,463	Total "Home Units" in Existence



Although each family accounts for one home, not all families live in the same type of home. Thus, some families live in private residences, others in two-family dwellings, and others in apartment houses. "Home Units", in other words, are not buildings; but each "home unit" represents the housing accommodation for one family.

Since apartment houses have been growing in popularity, as well as two and three family houses, it was necessary to find out what percentage of the "home units" were located in these various types of buildings. A study of the entire United States revealed the fact that there are 73,729.263 buildings per 100,000 families (the exact figure was carried out to the sixth place, but is not necessary for all ordinary local estimates). For approximate estimates, you may figure 73.72 buildings per 100 families. This showed that the 28,534,463 "home units" in the United States are contained in 21,038,248 buildings. And now if you will multiply the number of "home units" (in each age class) by the figure .7372, you will have the number of *buildings* within each age division.

Again referring to the national study, this estimating operation developed the following figures:

Ages of Buildings	Number of Buildings	Families Housed
Less than 10 yrs. old.....	6,845,268	10,919,348
10 to 20 yrs. old.....	5,562,751	7,229,217
20 to 30 yrs. old.....	4,334,723	5,307,833
30 to 40 yrs. old.....	2,714,477	3,230,078
40 to 50 yrs. old.....	1,581,029	1,847,987
Totals .....	21,038,248	28,534,463

By this time, if you have followed the instructions outlined in this article, you will certainly agree with the first sentence in the first paragraph—but you will also be very near your final figures. It remains only to segregate the total number of buildings so that they will show the three types; one-family, two-family, and multi-family. This last calculation is not nearly as difficult as one would think; simply multiply your figures by the percentage breakdowns given in the following table:

Ages of Buildings	Multiply by following figures to estimate number of		
	1-Family Buildings	2-Family Buildings	Multi-Family Buildings
1 to 10 yrs. old..	80.5	15.2	4.3
10 to 20 yrs. old..	82.7	15.7	1.6
20 to 30 yrs. old..	83.4	15.8	.8
30 to 40 yrs. old..	83.7	15.8	.5
40 to 50 yrs. old..	83.9	15.9	.2

The above figures are exact enough for all local estimates; it will be understood that the calculations were

carried much further to develop the following table of existing residential buildings in the United States:

Ages of Buildings	Single Family	Two Family	Multi-Family
Less than 10 yrs. old.....	5,515,445	1,046,033	283,790
10 to 20 yrs. old.....	4,601,758	872,797	88,196
20 to 30 yrs. old.....	3,613,439	685,308	35,976
30 to 40 yrs. old.....	2,271,552	430,812	12,113
40 to 50 yrs. old.....	1,326,393	251,557	3,079
Totals .....	17,328,587	3,286,507	423,154

In working up the estimate of any given locality certain local conditions must be remembered, such as that certain sections are older than others, etc. Thus, in the eastern States many very old houses will be found in a good state of preservation; but upon investigation it will be discovered that the majority of such structures have already formed part of previous "modernization markets". Judgment on the part of the estimator, with adjustments to allow for special local conditions, should always be respected.

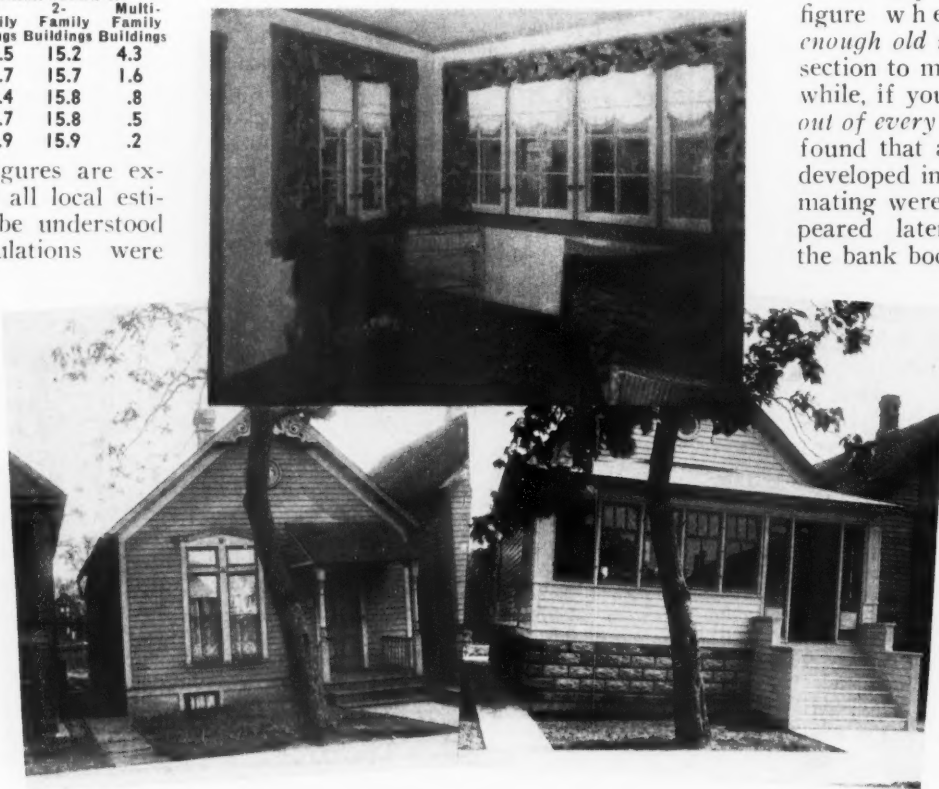
But a little time and study devoted to local investigation and this sort of estimating will soon assist any up-to-date builder to make up his mind whether there is a large enough volume of potential profits in his own community, to justify a strong campaign.

Practically one-third of the houses in the United States are less than ten years old—how many of them are in your community? Do they need re-roofing yet? Could you sell them a decorating job? How about making sun parlors out of porches? Couldn't you sell a lot of new garage door installations?

Roughly, one-fifth of the residential structures all over the country are more than 30 years old. Some of them are certainly in your own town—undoubtedly many of these older buildings could stand a coat of stucco, new clapboards, or shingled exterior side walls, besides a hundred little modernizations inside.

It's the kind of work that shows a good profit for the builder and contractor who knows his business; lots of times the builder's sales campaign for modernization work brings to light considerable new work, too.

At any rate—why not figure whether there are *enough old residences* in your section to make it worth your while, if you only get *one job out of every 100 houses*. Many found that among the figures developed in this kind of estimating were a few which appeared later on . . . in the bank book.



Building on a Sun Porch is One of the Easiest and Best of Old Home Modernizing Projects.



Appraisers are getting more efficient and know what to look for. High loans are the result of built-in value these days.

## As the Appraiser Sees It

Things they tell us the sharp-eyed representatives of financing houses look for in reporting what a modern house is worth

By JOHN WORTH

DON'T suppose anyone will stop *trying* to get a ten-thousand dollar loan on a house and lot that cost only seventy-five hundred, but it's getting harder all the time.

Appraisers are getting more efficient, and now that a movement is under way to have such work done only by certified men having special training for it, it looks as though efficiency in finding out how much a house is worth will be carried to the *nth* degree.

Just to make sure that this situation doesn't get to the point where appraisers know more about what ought to be in a house than the contractors that build them, I have made a survey of the items they look for, most of which are shown in the appraiser's check-list on the next page. By going over this list carefully, and checking it against the houses you are building or contemplate building, you will be able to get a good idea of what loan-value the property will have. This appraisal list is the result of long study of and experience with the wants of home-buyers, and gives a pretty good indication of what the modern house should have to give it maximum value under present-day conditions.

It is obvious, from the appraising check-list, that appraisers are looking for good architectural design; efficient floor plans; up-to-the-minute, modern equipment; appliances and materials that are associated in our minds with the best standards of American home-building. But the efficient appraiser goes much farther than this in determining the value of a house. Some of the qualities he looks for are intangible, but nevertheless important.

For example, one of the first things any "Manual of Appraising" states is that the house must be suitable to its location. In other words, a twenty-thousand dollar house on a street where eight-thousand dollar structures predominate suffers because it is out of its class. The house and lot must agree, for they are going to be

together a long time. A study should be made to see whether changes in the character of building in that locality will make the house seem out of place a few years after it is built. Re-zoning will very often have a marked effect on the value of a house from the appraiser's viewpoint. Shift in population, encroachment of apartments, entrance of business into a residential area, —all of these possibilities should be considered to determine whether the house will be suitable to the location not only at time of building but for many years thereafter.

### Standardized Style

Another thing the appraiser is taught to look for is style. He is told that the house must not be too out-of-the-ordinary, unusual, or "peculiar." Certain standard architectural forms which have proved popular in the community over a long period of time are considered safest. The Colonial, Georgian, English or Tudor, or Spanish are recommended. This does not mean that all houses have to look alike. They should have individuality, but not eccentricity.

Appraisers are aware of the growing appreciation of good architectural design, and are giving higher rating to houses having it. They are looking for less useless ornamentation on the exterior, and more simple straightforwardness.

The modern house must combine usefulness with beauty, and the appraiser considers the floor plan of first importance. In fact, he considers an efficient, well-arranged floor plan of greater value than any other single item. So much stress is laid on this that it is apparent the contractor can hardly spend too much time studying and improving his lay-outs, and getting ideas for new arrangements wherever possible. Such magazines as AMERICAN BUILDER & BUILDING AGE, which

## APPRAISER'S CHECK LIST

ITEM	1st Class	Fair	Poor	ITEM	1st Class	Fair	Poor	ITEM	1st Class	Fair	Poor
<b>MAJOR IMPORTANCE</b>				<b>LIVING ROOM</b>				<b>BED ROOMS</b>			
Suitability to location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adequate size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adequate size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Architectural style	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Good ceiling height	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ceiling heights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floor Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exposure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landscaping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Doorways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does Equipment Fit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for piano	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for twin beds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>BASEMENT</b>				Wall space for davenport	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for double bed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foundation walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space, other furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for dresser	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sewer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floor finish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for chiffonier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Waterproofing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fireplace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for dressing-table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cement floors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electric outlets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of radiator or register	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of radiators and registers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electrical outlets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Window bars	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lighting fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outside entrance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ceiling lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mirror door	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Locks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of switches	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dressing room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot water heater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decoration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Closet space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hot water coil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Book cases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>BATH ROOM</b>			
Floor drain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	French doors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tile floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sink or tubs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Convenient location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tile walls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coal bin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	View and exposure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adequate size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coal chute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>DINING ROOM</b>				Outside window	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chimney clean-out	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adequate size	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clothes hooks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chromium fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Outlets for washing machines, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Doorways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drawers built in	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shutoff cocks for water pipes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	View	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electric outlets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fruit room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exposure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Medicine cabinet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extra toilet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for buffet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mirror	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Child's playroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall space for china cabinet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shaving lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heating system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Built-in cabinets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Silent toilet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>CARPENTER WORK</b>				Electric outlets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shower	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type of framing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location of radiators or registers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Built-in tub	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floors, first	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ceiling lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Towel racks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floors, second	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Side lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ample hot water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decoration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Convenient location	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Roof	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Built-in features	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>CLOSETS</b>			
Sheet metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floor finish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cedar lined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	French doors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dressing closet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steel Joists	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Convenience to kitchen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shelves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>EXTERIOR</b>				<b>KITCHEN</b>				Hangers, hooks, fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Siding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Efficient arrangement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lights	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shingles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wardrobe built in	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Face Brick	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Exposure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clothes chute	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Common Brick	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sink	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Linen closet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stucco	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drain-board	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>MISCELLANEOUS EQUIPMENT</b>			
Stone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Table space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radio wiring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Combination	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dish-washer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wall beds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>HEATING</b>				Gas stove space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concealed radiation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boiler	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refrigerator space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Luminous house number	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Furnace	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Kitchen cabinet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Silent sash pulleys	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Gas stove vent pipe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transom ventilators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Valves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electric outlets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shutoffs for pipes leading to different fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Floor finish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Weather stripping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Oil Burner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lighting fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Insulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thermostats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cupboards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Screens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Coal Bin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Storage space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Outside hose connections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Automatic Feed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Breakfast nook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drapery hardware	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>PLUMBING</b>				Broom closet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clothes drier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Piping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Built-in ironing board	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>GENERAL</b>			
Covering	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Built-in table	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Front vestibule	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bath tub	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ventilating fan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hall	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lavatory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dumb waiter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Coat closet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shower	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Incinerator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stairway to admit carrying up furniture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sink	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Mixing faucet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stairway from landing to kitchen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Toilets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Oven regulator	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concrete walks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Laundry tubs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Package receiver	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Concrete driveway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Heater	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Range—gas or electric	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Garage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>ATTIC</b>				<b>GENERAL APPEARANCE</b>				Down spouts connected with sewer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attic stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Painting, outside	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Painting, inside	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clothes-poles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ventilation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decoration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cross ventilation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plate windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Children's playground	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sheet windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flower boxes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lighting fixtures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Leaded windows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Garden seats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Play room	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wrought iron	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sun dial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extra bedroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Window sills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Trellis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Awnings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Insulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								

The list shows items the appraisers look for in a house. Use it in checking your plans and insure a high rating before work is begun.



are constantly publishing new designs, are doing much to help the builder in this respect.

Landscaping and general appearance of the grounds and exterior equipment of the house are proving of greater importance in determining the appraiser's valuation of the modern house. The American people are growing more "park" conscious. The development of beautiful parks in every American city has taught them to want grass, trees, and shrubbery around their homes, and appraisers have found numerous instances where the house with attractive greenery about it has brought in many hundreds of dollars more than one with a bare lot.

Many builders now are making permanent agreements with good landscape architects who give them the benefit of their expert training at not too great expense. The untrained builder is likely to overdo his planting, or not to make the most of what he does spend on his landscaping unless he has the benefit of sound counsel.

### Does the Equipment Fit the House?

One feature the appraiser pays much attention to and which is of great importance to the builder is the selection of equipment for the house. He must be careful not to put in better equipment than is warranted by the general standards of the house and the community in which it is located. For example, a good heating system is desirable, but an elaborate system costing a figure far out of proportion to the type of house will not be

worth the additional amount it costs. A small house cannot economically include two expensive bathrooms or a high-priced vacuum heating plant. That is, an appraiser is likely to point out that an average person considering the purchase of a house in the low-cost field would not be willing to pay the extra amount involved by this unusually expensive equipment.

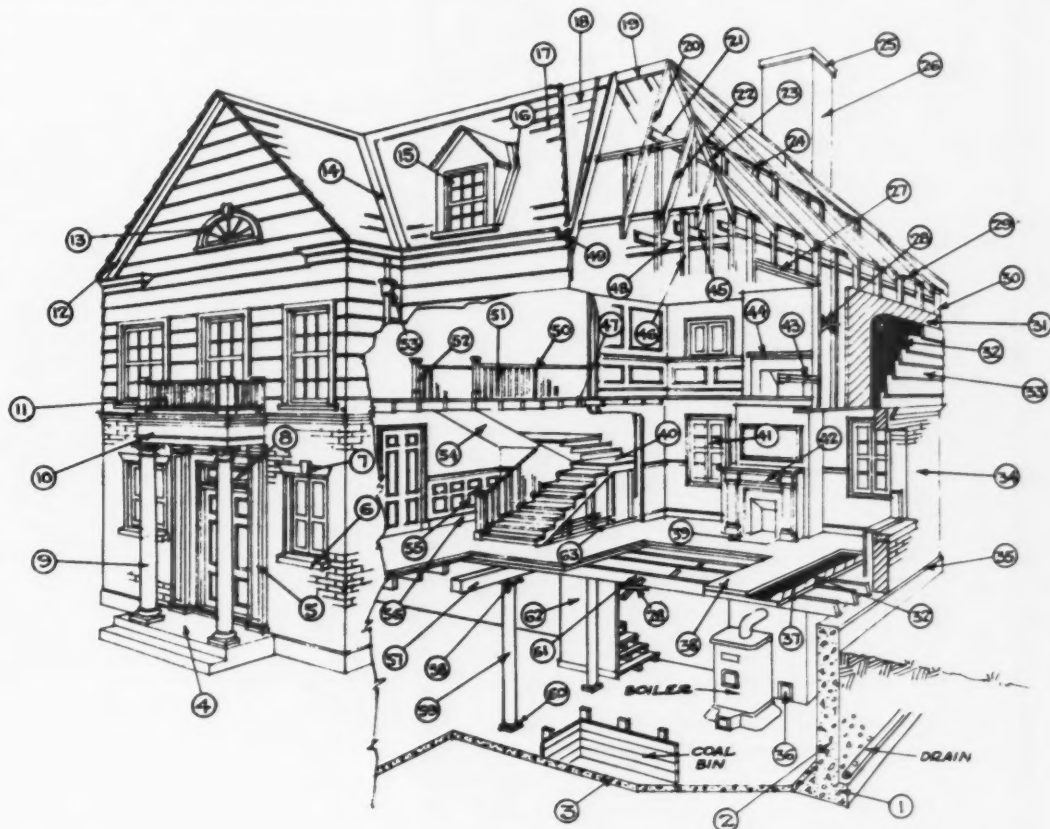
Just as the house must fit the locality, the equipment must fit the house, and it is very possible to sink more money in unnecessary extras than can possibly be gotten out.

In addition to all this, appraisers are studying up on good construction, and are putting down credit or discredit, as the case may be, in many instances that in the past they would not have known enough to consider. They are emphasizing sound, first-class construction throughout, regardless of the size or final value of the house. They know that cheap construction means a heavy burden of repairs in the future, and they are cutting down the appraisal value wherever they find the slightest indication of it.

In the long run, it is the value put into a house plus more intangible things, such as good taste, good insight into community conditions, and appreciation of the needs of people, that determine the value of a house, whether for loaning or other purposes. Appraisers are merely coming to recognize true value, and the conscientious, reliable builder cannot help but be benefitted by the fact that they are learning to recognize the worth of the work he is doing.

### NAMING ALL PARTS

This useful tabulation of names and this diagram are from the new book, "How to Judge a House," just issued by the National Committee on Wood Utilization of the U. S. Department of Commerce, Washington.



1. Footing.
2. Foundation wall.
3. Basement floor.
4. Porch floor.
5. Pilaster.
6. Window sill.
7. Key stone.
8. Transom.
9. Column.
10. Entablature.
11. Balustrade.
12. Cornice.
13. Fan window.
14. Valley.
15. Dormer window.
16. Flashing.
17. Shingles.
18. Roof sheathing.
19. Ridge.
20. Common rafter.
21. Collar beam.
22. Jack rafter.
23. Hip rafter.
24. Purlin.
25. Chimney cap.
26. Chimney.
27. Header.
28. Bridging.
29. Plate.
30. Corner post.
31. Sheathing.
32. Building paper.
33. Siding.
34. Brick.

35. Water table.
36. Cleanout door.
37. Subfloor.
38. Finish floor.
39. Hearth.
40. Stair landing.
41. Casement window.
42. Fireplace.
43. Rough sill.
44. Mantel.

45. Ceiling joists.
46. Studding.
47. Floor joists.
48. Ribbon.
49. Gutter.
50. Handrail.
51. Balustrade.
52. Newel.
53. Leader head.
54. Stair soffit.

55. Wainscoting.
56. Base.
57. Girder.
58. Column cap.
59. Basement column.
60. Column base.
61. Joist.
62. Partition.
63. Lath.

# BUILDER-DEALER TEAM WORK

## The WISE Home Investor Will **BUILD NOW!** Lowest Building Costs in Years Skilled Labor Plentiful-Reasonable



We repeat "BUILD NOW"—Never were conditions more favorable! Your investment is certain to quickly enhance in value. If you build under this new practical and easy plan—at this most opportune time.

Think of it, you have advantage of the lowest building costs in years—the most highly skilled craftsmen (very scarce during normal times) will construct your home under the supervision of our building experts. You will get only the choicest of materials—which we are now furnishing at Rock Bottom prices. And what is of extreme importance, you can acquire this home through the most simple, convenient, pay-like-rent plan offered today.

We Give You the *Easiest and Lowest Terms*

# 15 YEARS TO PAY

and FINANCE up to 75% of Total Cost

READ over carefully the following features of our plan. Compare them with any other you have ever heard of. See how your interests are protected—how you are assured the utmost in home value for every dollar you spend.

- ① **Certified Materials Used**  
Only nationally known products of recognized merit are used in Alliance homes.
- ② **Sound Construction**  
Each Alliance Bonded Home is built under the personal supervision of a skilled construction expert assuring you the finest construction throughout.
- ③ **Correct Design**  
The designs of all our homes are the work of registered architects so that they are in good taste and architecturally correct. The resale and loan value of your home is thus protected and assured for the years to come.
- ④ **Bonded**  
Every home is backed by a Surety Bond and covered by a certificate of quality.
- ⑤ **Small Payments**  
The extremely low interest rate we can offer makes possible payments that are most reasonable—in many cases less than rent.
- ⑥ **We Finance Up to 75% of Total Cost of Lot and House**  
Your initial investment is only 25% of the total cost. As you can see that our investment in your home is greater than yours—our interests and yours are identical. Title guaranteed by Citizens Title Insurance and Mortgage Co. of Passaic, N. J.
- ⑦ **Guaranteed!**  
Your home carries the full guarantee of The Alliance Lumber Corp., a local firm of recognized responsibility. You are not dealing with an organization miles away which has no interest in your community except what it can get out of it in the way of business.
- ⑧ **Alliance Homes are built only by local skilled builders of known responsibility and integrity.**
- ⑨ **We handle the complete project for you.**

Why delay longer in building that home? Come to our office and get the complete story. Choose the house you want—then sit down with our home building experts and they will show you how our plan will operate for you. Make that visit today.

Morgan Authentic Woodwork Used Throughout All Alliance Bonded Homes



WRITE - PHONE OR CALL TODAY FOR FULL PARTICULARS  
**ALLIANCE LUMBER CORPORATION**  
MAIN OFFICE—PASSAIC—Phone Passaic 2-4400  
PASSAIC—PATERSON—GARFIELD—TEANECK—EAST PATERSON

**WITH US - YOU DO BUSINESS WITH AN OLD -  
LOCAL RESPONSIBLE NEIGHBORHOOD FIRM - NOT  
AN ORGANIZATION MANY MILES AWAY WITH NO  
INTEREST IN THE WELFARE OF OUR COMMUNITY**

## Out-of-Town Competition Successfully Met by 75 Per Cent Home Financing Through Local Lumber Dealer, with the Skilled Local Builders Handling the Work

AS a spur to home building activity the Alliance Lumber Corporation of Passaic, New Jersey, working closely with the skilled local builders, has launched a plan under which it will sell home construction and grant mortgages for three-fourths of the home value on a fifteen-year payment plan. This same plan is available to builders and dealers everywhere, and will no doubt be grasped with most alacrity in those towns where the mail order houses have been most active. The scheme was explained to an invited group of more than 200 builders on January 30 at a banquet in the Passaic City Club; and was enthusiastically endorsed by the builders and contractors present.

As explained by Benjamin Breinig of the Alliance concern, if a homeseeker owns a plot of ground held free and clear, the company will finance and supervise the construction of a home, the cost of which may run as high as three times the value of the plot. In the case of a person who does not possess the ground on which to build, the concern will undertake to supply ground and dwelling on a down payment of 25 per cent of the total cost.

Amortization charges and interest are arranged so that the actual cost of ownership of a home under the plan, beyond the one-fourth down payment, will be at the rate of \$8.44 per \$1,000 per month—or a "rental" figure of \$84.40 per month for 15 years until fully paid, for a dwelling the construction cost of which may be \$10,000.

The plan further provides that when an owner has paid 55 per cent of the mortgage he may if he desires establish the balance as a permanent loan.

It means much to the local home building industry in every community that by adopting this plan, they can match point for point the home financing offers of the great mail-order firms, which, during the past year, have made such inroads into the business of local builders and dealers in so many localities. Now, by making similar financial arrangements, the local builders backed up by their local lumber dealers can accept the challenge of these out-of-town concerns and in a two-fisted aggressive manner strike in force at the one and only so-called advantage which these mail-order houses have to offer—namely, "easy payment" financing.

The truth of the matter is that the local dealer can undersell mail-order competition nine times out of ten, as has been conclusively proven by nation-wide surveys. It is the job of every dealer and contractor in the country to tear down the ridiculous notion held by millions of the American public that the mail-order house is the nation's lowest price source of homes and building materials.

Notice particularly "Point 8"; all the advertising features the Local Builders.

The Alliance Lumber Corp. was moved to action to stem

**Prompt Adoption of This Plan in All Communities Seen as Most Effective Method of Stimulating Home Building and of Stopping the Mail Order Firms**

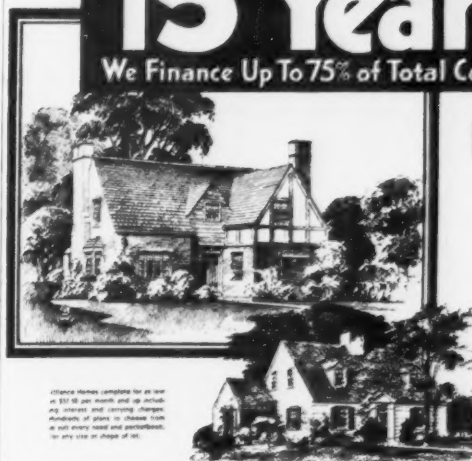
owner has reduced the unpaid balance to 55 per cent; the average time required for this, with monthly payments of \$8.44 per thousand, is seven years. At that point the monthly payments can be continued, paying out complete in 15 years, or at the option of the home buyer the remaining indebtedness can be converted into a straight mortgage. Thus this enterprising dealer matches the mail-order financing setup point for point, with the very real extra advantage that their homes will be built of the best nationally known products only—and all work will be done by skilled local builders of known ability and prestige.

In short, they offer all that the mail-order house provides and more in the way of new home and modernizing finance time payments, plus many added advantages not to be obtained from any mail-order house.

**Every Home Seeker in This Community Can Own —  
an ALLIANCE BONDED HOME of Enduring Design  
*This Easy Way*—LIKE RENT**

# 15 Years to Pay!

**We Finance Up To 75% of Total Cost - At an Amazingly Low Interest Rate**



**All ALLIANCE HOMES**  
*Designed by Registered Architects*  
**No Charge for this VALUABLE SERVICE**

• Most interesting feature of our service is the home plans we furnish that are about "average" selling in community furnished, but distinctive, individual designs of definite types.

Whether you prefer a Colonial home, an English, Spanish, Norman French, or whatever your taste dictates, that is the one we can build for you. Each plan is the work of a registered architect, thus assuring you substantial design, architectural correctness, character. (For home sold at an average thirty percent more than at the store is built).

This service also is practical in its value to you, yet it costs you not one cent additional. Don't overlook this feature of design for your home—we can give you complete plans in many positions.

Morgan Authentic Woodwork Used Throughout  
All Alliance Bonded Homes

**NOTE** THESE ALL IMPORTANT  
... ADVANTAGES ...

- 1 Certified Materials Used**  
Only nationally known producers of recognized merit are used in Alliance Homes.
- 2 Sound Construction**  
Each Alliance Home is built under the personal supervision of a certified construction expert ensuring the finest construction standard.
- 3 Correct Design**  
The designs of all our homes are the work of experienced architects so that they are in good taste and architecturally correct. The style and construction of your home is thus protected and preserved for the years to come.
- 4 Bonded**  
Every home is backed by a Surety bond not covered by a certificate of equity.
- 5 Small Payments**  
We offer a variety of interest rates we can offer various possible payments that are most reasonable in many cases based on your own.
- 6 We Finance Up to 75% of Total Cost of Lot and House**  
Your initial commitment is only 25% of the total cost. So you can use that low investment to your home to generate \$200,000 and then start your retirement.  
Link government for Complete Home Insurance and Mortgage Co. of Dallas, N.J.
- 7 Guaranteed!**  
Your home carries the full guarantee of The Alliance Lumber Corp., a total care of completely responsible. The use of our materials with care and attention has no measure in your responsibility when it comes to the quality of it is in the way of business.
- 8 Alliance Homes are built only by local skilled builders of known responsibility and integrity.**
- 9 We handle the complete project for you.**

[illegible]

### Build Now—Building Costs Lowest in Years!

WRITE-PHONE OR CALL TODAY FOR FULL PARTICULARS

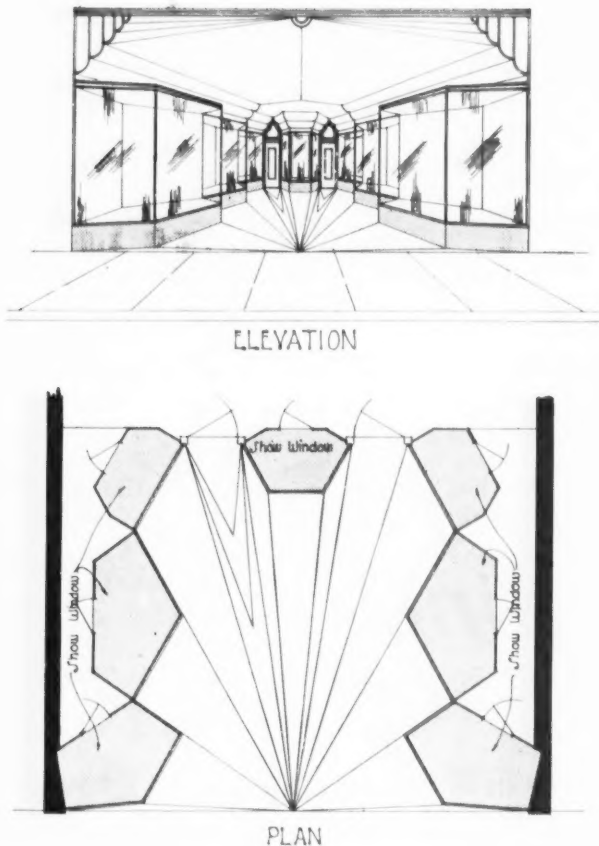
# ALLIANCE LUMBER CORPORATION

MAIN OFFICE—PASSAIC—Phone Passaic 2-4400—PASSAIC—PATERSON—GARFIELD—TEANECK—EAST PATERSON

This advertisement, run in full page size in Saturday's newspaper, brought 52 prospects into the office Monday. Ten of these have already been sold and work on their homes started.



# PLANNING the Modern Chain Store



## Layout Pointers that Increase Store Profits

By the Consulting Architect  
of One of the Big Chains

window display is controlled by an automatic clock which turns the lights on or off as desired at any time.

**Interior Display:** Display in the interior of stores is accomplished by a series of shallow shelving, arranged along the side walls. This shelving is about 7 feet high. In addition to this, all counters have goods displayed on them. Provision is made for all necessary electric wiring, or any miscellaneous electric wiring arrangements, such as wiring for Christmas tree lighting, or other electrically displayed goods. Also, all necessary plumbing arrangements must be provided where counters are used for the dispensing of drinks or food. There are also usually glass signs suspended from the ceiling which indicate counter-numbers or type of merchandise, and are used to guide the buying public.

**Clear and Unobstructed Floor Space:** Intermediate columns, or any obstruction is considered a drawback and therefore a store is usually designed with clear span girders supporting ceiling or roof. These girders are resting on the outside wall by means of steel grillage so that pilasters are not necessary in the masonry. The same thing applies to the store front. Where a girder is designed to support the entire masonry over the plate glass windows, this is shown by section through front parapet wall and eliminates all columns in store front construction.

**Widths of Aisles:** It has been found that the most practical widths of aisles are between 7 and 8 feet in clear, permitting easy passage. However, where local conditions do not permit such width, aisles have been made as narrow as 5 feet; but this is not advisable.

**Accommodation of Employees:** In rear of first floor is shown a small toilet used by the management, and in rear of basement, a rest-room with connected toilet is provided. These rooms are ventilated as shown by section through rear wall at office, and where natural ventilation is not obtainable, mechanical ventilation must be installed. It is noted that the employee's division in basement is entirely separated from the store room for merchandise.

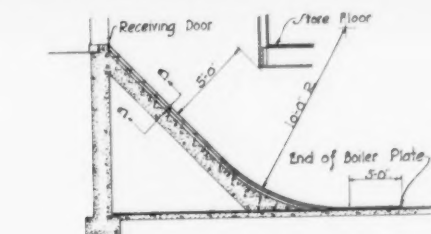
**Freight Chute and Storage of Stock:** In rear of building directly accessible to alley, a freight chute is installed as shown by detail, by means of which barrels and cases of goods are dropped into the basement, the curve of the chute absorbing the shock sufficiently to prevent breakage. The receiving department is located between the chute and the general storage in the basement. As goods are received, they are unpacked and stored on shelving which is provided in front part of basement. Ordinarily, all goods are carried to the first floor as needed. However, where goods require many changes daily, sometimes dumb-waiters are installed through the floor, supplying certain counters. Where bulky or heavy goods are sold, or groceries, elevators must be installed.

**S**UCCESSFUL chain stores have developed certain standards which have been incorporated in their up-to-the-minute store buildings. The layouts vary according to the size of the property available; but the floor plan shown opposite gives a general idea of a layout which is used by one of the largest chain store organizations in this country. However, layouts differ as it is sometimes necessary to lease space as part of existing stores, in which case the layout has to be adapted to suit conditions.

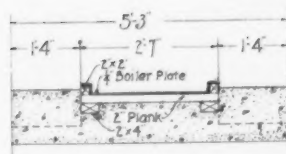
There are certain features which anyone called upon to plan a modern merchandising space must consider essential, such as: the floor area required, window display, interior display, clear and unobstructed floor space, widths of aisles, accommodation of employees, freight chute and storage of stock.

**Floor Area Required:** It has been found that for an average store a floor area of approximately 3,500 sq. ft. per floor is required for first floor and basement. The first floor is used for the display and sale of goods, a small toilet, office for management, and stair to basement. A freight chute is provided by means of which goods are sent to the receiving room in basement, where they are unpacked and stored.

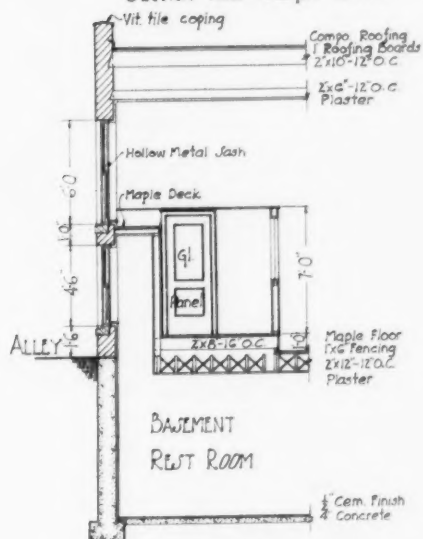
**Window Display:** The show-window display is completely enclosed in attractive cabinet work, with parquet flooring, sides and ceiling of paneling. Reflectors for electric light are located in space between store ceiling and soffit over store front window display, so that all wiring and fixtures are concealed; holes are cut in ceiling panel and reflectors are mounted above so that all light rays are uninterrupted and give maximum illumination. The electric lighting for the store front



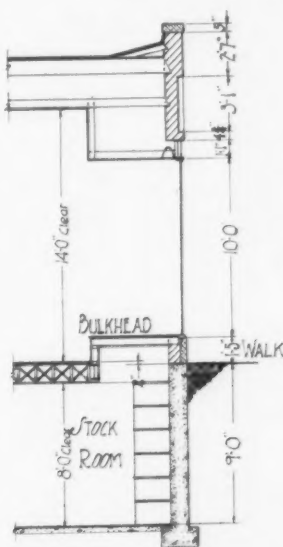
SECTION THRU FREIGHT CHUTE



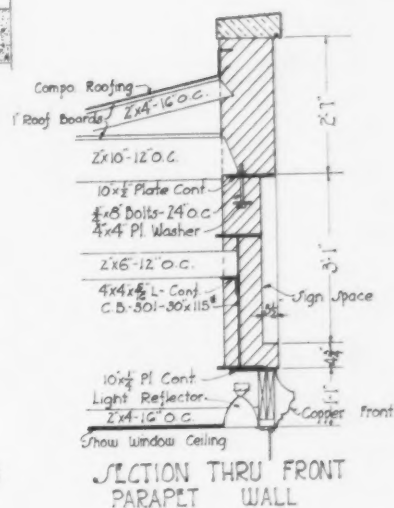
SECTION B-B



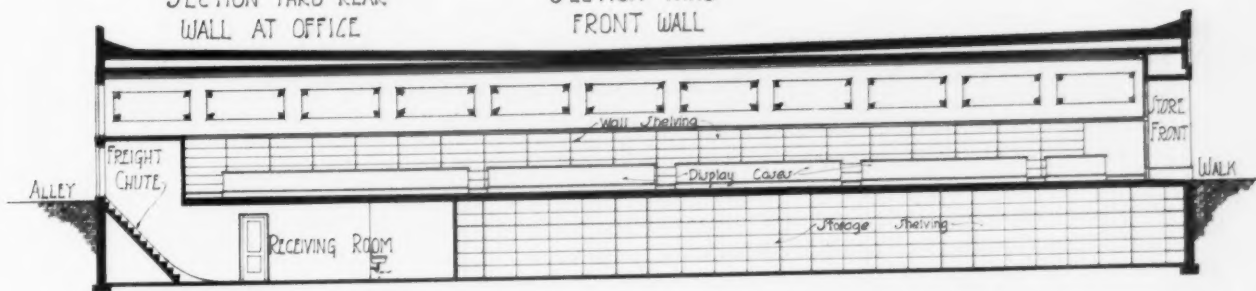
SECTION THRU REAR WALL AT OFFICE



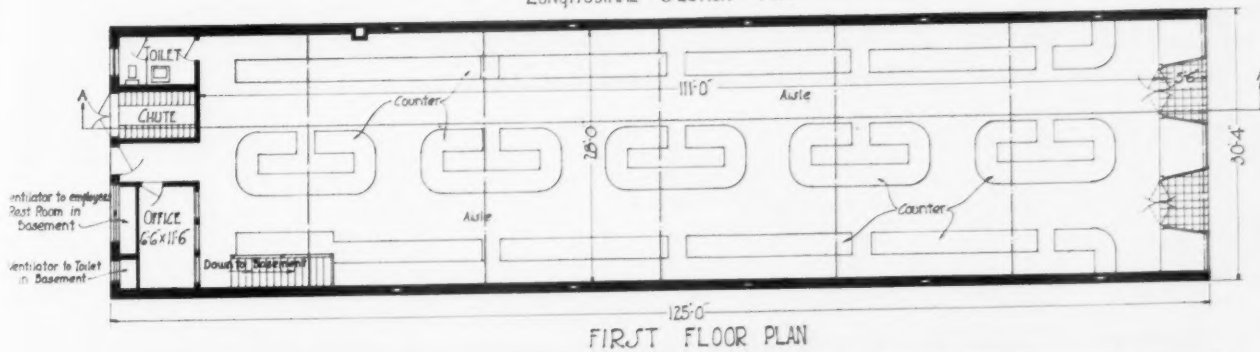
SECTION THRU FRONT WALL



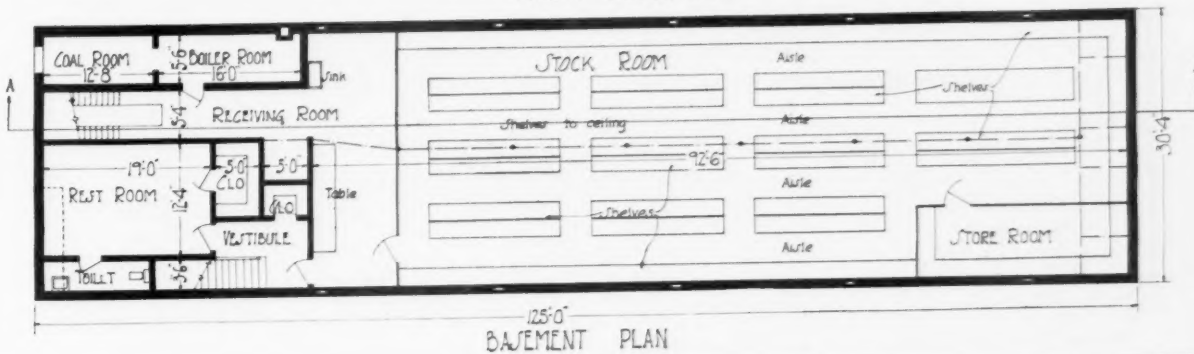
SECTION THRU FRONT PARAPET WALL



LONGITUDINAL SECTION A-A



FIRST FLOOR PLAN



BASEMENT PLAN



## The House of the Month

Homelike Frame Dwelling with Plans That Offer a Number of Good Ideas for the Designers and Builders of Homes

**T**O the designer and builder of homes every attractive and well planned house is a subject for study and a source of ideas. If he appreciates the merchandising value of design, he will analyze the plans and details to determine which points contribute most to total effect, and then will make them a part of his stock in trade.

He will select a detail here and there, an especially attractive doorway, an effective roof line, a beautiful stairway, a clever solution of the closet problem, a convenient arrangement of breakfast nook, kitchen and dining room. These he will catalog, carefully indexing each item for future reference. The next time he develops a home design these references will be instantly available to help in developing the new plan.

Take the plans shown on the next four pages, for ex-

ample. Here is a wealth of material for the builder who is a student of design, for here is a house which is distinctive in more ways than one. In its simple exterior the designer has achieved that much sought for homelike effect while, at the same time, recognizing and incorporating the most modern conception of garage building.

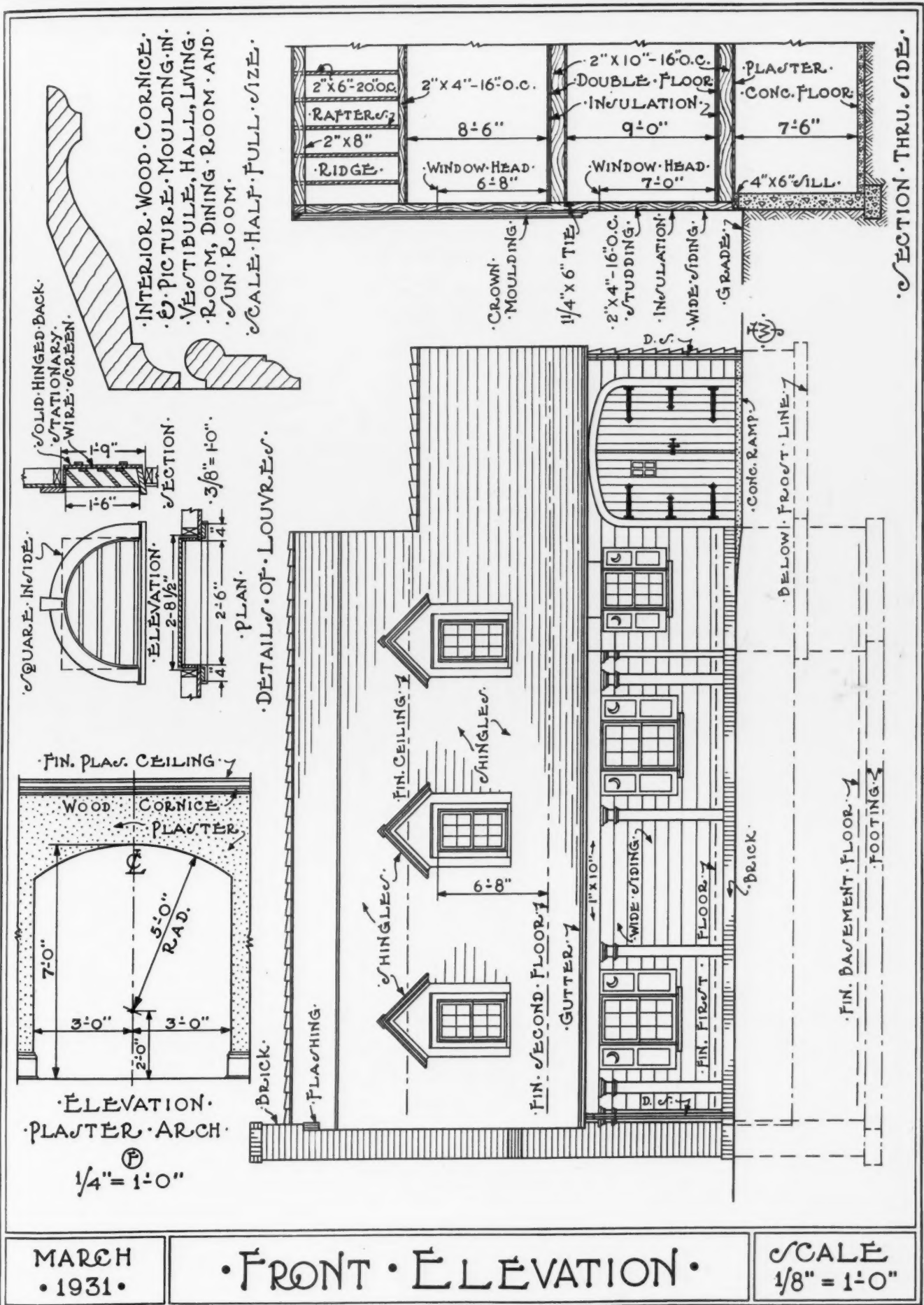
In the garage alone are several commendable points. Present day demand is all for the integral or built-in

garage, with its entrance most conveniently placed at the front. In this design such a garage has been provided, perfectly harmonized with the architectural style, and equipped with doors which in no way detract from the beauty of the house.

Equally important is the treatment of the doorway from the garage into the house.

**The Designer and Builder will secure many suggestions from these plans. Next month a brick house will be detailed.**





Front Elevation, Vertical Section, and Details of the House of the Month. See next three pages for plans.









The Built-in Garage, with a Door Directly Into the House, is the Ultimate Standard Toward Which Private Garage Construction is Tending.



## GARAGE IMPROVEMENTS— The Builder's Opportunity in 1931

**Garage Building Is a Live, Easily Sold Market Offering Profits in Direct Ratio to Quality of Design, Construction and Equipment—the Second of Two Articles**

**A**BOUT half a million private garages will be built in the United States during the year 1931. Over two hundred million dollars will be spent on their construction. Not only that, but thousands of existing garages will be remodeled and modernized by those up-and-coming builders who are awake to the possibilities of this live, easily sold, and highly profitable building market.

Some of the half million new garages will be little more than sheds, not worthy of the cheapest automobile that might be housed in them. Others will be properly designed, well built, and conveniently equipped. The proportion of the total which will fall in each of these groups will depend on the selling efforts of American builders and contractors. Their profits will be in direct ratio to the number of garages which fall in the properly designed, well built, and conveniently equipped group.

Private garage design has been going through a

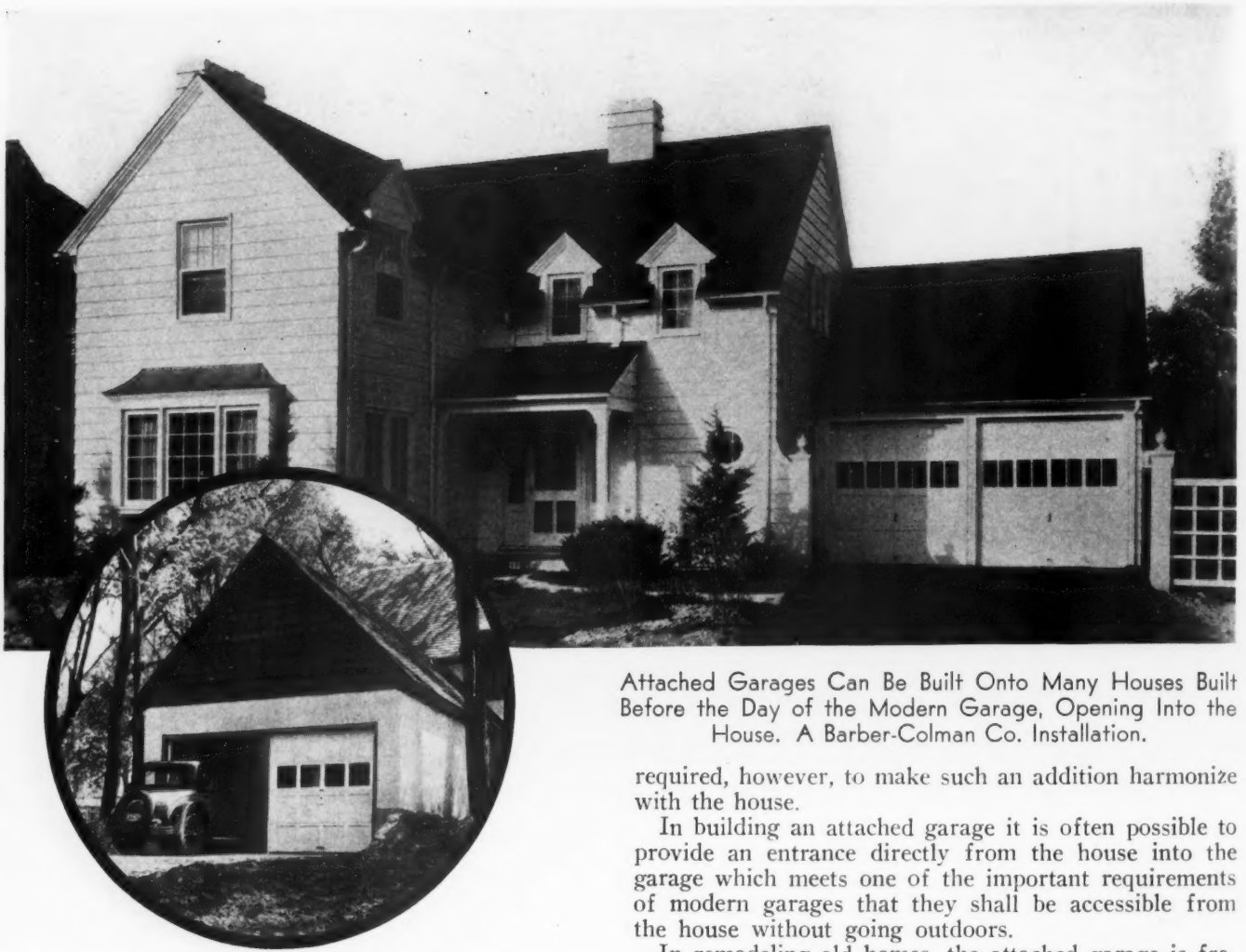
process of evolution during the last few years, involving three distinct types of building. These are the detached type, a separate garage, entirely unconnected with the house; the attached type, actually a separate building but connected with the house; and the integral or built-in type, occupying a portion of the basement or first floor space.

All three of these types are being built right along but the tendency is decidedly away from the detached type, with the integral type being used more and more for the better class of residences.

The disadvantages of the detached garage are obvious. It is inconvenient to get to in cold or stormy weather; and it is difficult and expensive to heat. It was, quite naturally, the original type of garage, built before any thought was given to the problem of harmonizing the garage with the house and providing convenience. Where this type is still used it is now, as a rule,



A Battery of Individual Garages Is Usually Attached to an Apartment Building or Built Into the Basement, the Latter Being the More Modern Development. A J. G. Wilson Corp. Installation.



Attached Garages Can Be Built Onto Many Houses Built Before the Day of the Modern Garage, Opening Into the House. A Barber-Colman Co. Installation.

placed close to the house instead of at the extreme rear of the lot. It will be used less and less and for this reason should be avoided by the builder who must consider the salability of his houses.

The attached garage was the second step in the process of evolution. It was the first attempt to so locate the garage that it would be handy in bad weather and to make it join with the house as a single harmonious unit. In many cases it is built as an addition to an already existing house; and where a garage is required under such conditions is the natural solution of the problem. Great care and a degree of ingenuity are

required, however, to make such an addition harmonize with the house.

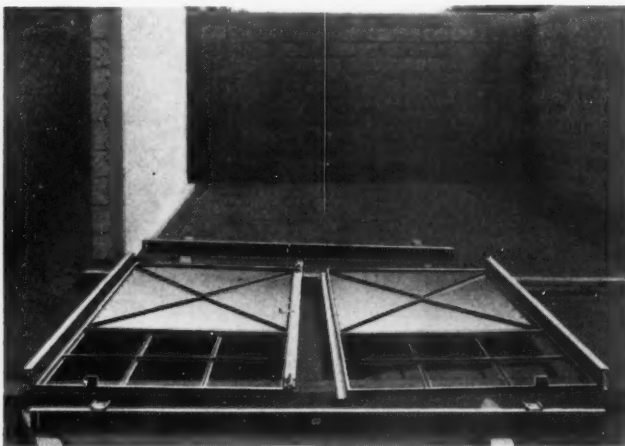
In building an attached garage it is often possible to provide an entrance directly from the house into the garage which meets one of the important requirements of modern garages that they shall be accessible from the house without going outdoors.

In remodeling old homes, the attached garage is frequently used as an addition to one side, balancing a sun porch addition at the opposite side. This is an especially appropriate treatment for a Colonial design. One of its chief disadvantages is the increased cost of heating such an extension. Another is the fact that the doorway between house and garage can not as a rule be properly placed in relation to other portions of the house. This point will be brought out in the discussion of the integral garage.

The integral type of garage is the ideal type and will undoubtedly become the standard type. In the Allwood development, in New Jersey, a feature article on which appears in this issue, forty-five hundred single family houses are being built, each with a garage as an integral part of the house itself. Nor are these houses in the high price class. They are all five and six room dwellings ranging in price from about \$6,000 to \$9,000.

The reason given for providing the Allwood houses with integral or built-in garages is: "Since automobiles have come into universal use, the garage has been made a part of every house. This is cheaper than building a detached garage, improves the house appearance and provides a heated garage, a feature thoroughly appreciated in the winter time when cold motors are so hard to start."

In planning either the attached or built-in garage, its position in relation to the stair hall is a matter of primary importance. Convenience demands that the house entrance to the garage shall be from the stair hall. The reasons for this are obvious. If the house entrance is not from the stair hall it will be necessary to pass through living or service rooms in going to and from the garage. This is inconvenient both for the person



Steel Doors Furnished by The Bogart & Carrough Co., Are Assembled at the Job and Raised Into Place as a Complete Unit.



using the car and for other members of the family. With the garage entrance from the stair hall, it is also handy to the coat closet so that coats, hats and umbrellas may be disposed of handily when coming into the house.

The correct garage entrance arrangement is possible with the attached garage but is much more easily achieved with the built-in garage, whether it be a basement or grade level type.

Where the house is built on a sloping site, it is quite simple to provide a basement level built-in garage, advantage being taken of the natural slope to provide a level garage approach. Level sites are, however, much more common than sloping sites and, in the case of the level lot, a basement level, built-in garage must have a sloping approach. This is entirely practical but care must be taken to see that the slope is not too steep for easy handling of the car.

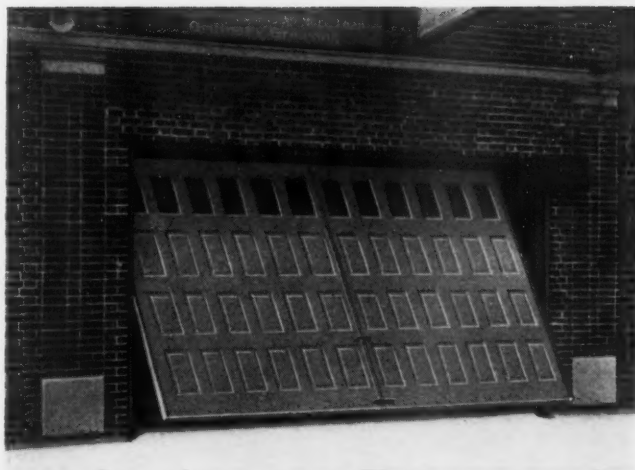
Grade level built-in garages are now becoming more and more common. At first the tendency was to place these so that the garage entrance would be hidden at the rear. Now, however, entrances are being provided at the side and even at the front. The principal reason for the rear entrance was the desire to hide the large garage doors and conceal the fact that this portion of the house was a garage. This reason is no longer of importance.

The automobile has become so definitely a part of modern living, and the garage has become so definitely a part of the home establishment that there is no reason for concealing the existence of the garage. At the same time garage door manufacturers have developed doors and equipment which, when properly selected and installed, add to rather than detract from the architectural effect of the house as a whole.

This factor of architectural effect is becoming increasingly important as public taste is becoming more developed. The home owning and buying public becomes constantly more exacting, a tendency which will continue to exert a wide influence from year to year.

It is because of this fact, in addition to the essential

Wherever the Detached Garage Is Still Used, It Is the Tendency to Place It Close to the House and, if Possible, Near a Side Entrance. An Automatic Door Corp. Installation.



A New, Double Width Door, by the Crawford Door Co., Reduces the Required Width and Cost of Building the Double Garage.

element of convenience, that the built-in garage is now recognized as the ultimate standard for private garages. It is much simpler to achieve a desired architectural effect in a single unit than it is in combining two units or in designing separate units.

One very important point which must be considered when planning the house garage is the question of the number of cars to be housed. It is the consensus among real estate men that every private residence should be provided with a double garage, and the failure to do so is a decided handicap either to renting or selling. This fact will be more generally recognized as





A Basement Level Garage Requires Proper Drainage to Prevent Accumulation of Water at the Entrance. A Beeman Door Control Co. installation.

time goes on, for many of the automobile manufacturers are spending large sums of money in advertising the idea of a second car for every family.

While the cost of providing two-car space in the garage is somewhat greater than for providing one-car space, the additional cost is relatively small. Especially is this true in the case of the built-in garage which occupies basement space. The space used would otherwise, as a rule, be merely waste space. It is already enclosed and floored and the principal difference lies in the extra door equipment. This is a minor item in the total cost of the home and, because of its renting and sales value, well worth the expenditure.

In determining the size of the private garage the builder must take into consideration the kind of cars which it is likely to house, and their over-all dimensions. This is really a simple matter as a little observation

Right: This Operating Mechanism, Made by P. & F. Corbin Co., Makes Swinging Doors Easy to Handle. Below: There Is a Big Market for Garage Door Hardware and Installation Work in the Service Station Field. An installation by the Majestic Co.

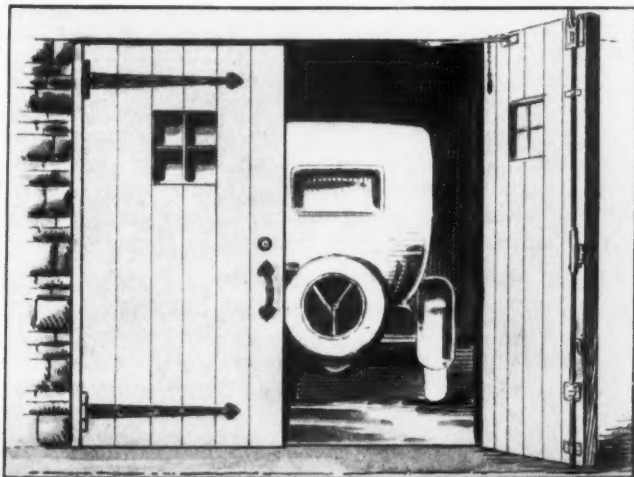
will show that persons owning homes in any certain price class will, as a rule, own cars in a corresponding price class.

When it comes to the building of the garage, the general construction involves nothing which is outside the experience of every builder. There are, however, three points which should receive greater consideration than they have been given in the past. These are insulation, windows, and ventilation.

In the case of the built-in garage the question of insulation is simplified by the fact that the garage walls are simply the house walls and are provided with the same insulation as the rest of the house. But for attached and detached garages special attention should be given to insulation.

While it is not necessary to maintain as high a temperature in the garage as in the living rooms of the house, during cold weather, the temperature should be kept sufficiently high so that there is no discomfort in going from the house to the garage; so that there is no danger of frozen radiators in case of a sudden drop in temperature, and so that the car will start easily even in the coldest weather.

It is, of course, essential that the walls and floors between the garage and the other portions of the house should be of fire-resistant construction. This is usually demanded by local building codes. In line with this it is also necessary that the garage side of the door leading from the garage to the living portion of the house should be metal covered, another usual building code requirement.





Ample windows should be provided in the outside walls of the garage. There is no reason why it should not be as light and pleasant as the rest of the house, especially when the owner spends considerable time in the garage tinkering around the car. Ventilation, too, is essential. A leaky radiator, or washing of the car, would make for dampness without ample ventilation. Even more important is the matter of safety. With a well ventilated garage there is little danger from the deadly monoxide gas even in case of carelessness. Ventilators can be placed in the walls close to the ceiling. The louvre type serves the purpose most effectively, permitting good ventilation but excluding rain and snow.

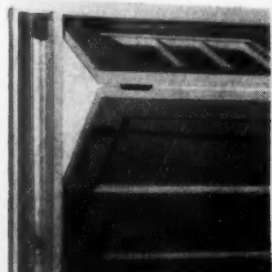
Garage floors should be of concrete. They should be laid with a pitch of one inch to six feet toward a center drain which carries off water when the car is washed, when the radiator leaks or when it is necessary to flush out the garage with a hose.

Where a basement garage is reached by a sloping approach, it is necessary to provide further drainage to prevent water running down the incline into the garage whenever there is a heavy rain or when snow is melting. One excellent way to accomplish this is to make the last few feet of the approach slope up instead of down and to place a drain at the point where the upward slope starts. This keeps the water from running into the garage or accumulating in front of the doors.

Such a drain can either be connected with the sewerage system or a dry pit can be dug under it. The drain should, of course, be placed in the center of the driveway to avoid possible breakage from the automobile wheels passing over it.

In planning the modern garage the selection of door equipment is of first importance. A complete analysis of products of most of the manufacturers of garage door equipment was published in the February issue of the *AMERICAN BUILDER AND BUILDING AGE*. This information was tabulated to serve as a ready reference guide in the selection of door equipment, and the general characteristics of the various types were discussed in the article. From this information the builder can

Right: An Upward-Acting Door with an Unusual Type of Spring Mechanism Manufactured by the McKee Door Co. Below and to left: The American Sash & Door Co. Offers an Upward Door Which Is Almost Self-Operating.



A Sliding-Folding Type of Garage Door, with One Section Swinging for Use as a Service Door Is Made by the Stanley Works.

easily select the general type of equipment he wishes to use or which is preferred by his client and by writing to the manufacturers of this type can, by the most direct method, secure complete information on which to base his selection of a particular make.

Lighting the garage is of more importance than is generally understood. Every automobile owner knows how inconvenient it is to try to do even the most trifling bit of work on the car in a half-lighted garage. An overhead light, of ample strength, and with a reflector, placed directly over the hood of the car, is worth its price when anything must be done to the motor.

Washing equipment is desirable in many garages. It is a simple matter to provide an overhead tap to which a hose can be attached for convenient washing. Such equipment will be appreciated by prospective buyers and will help close the sale of the house when it comes to convincing the man of the family.

Finally, it is well to provide shelving, open or enclosed, for the storage of sponges, chamois and clothes, for extra parts, and the many other small items which the car owner accumulates. It keeps them from getting in the way or getting lost, helps to keep the garage neat and simplifies keeping it clean. This convenience is not costly but is appreciated by home and car owners.





# How to Build Better

The First of a Series of Articles on Frame House Construction\*

By N. S. PERKINS

Construction Engineer, National Committee on Wood Utilization, U. S. Department of Commerce

**H**OWEVER carefully a building may be framed, or however ruggedly it may be built, an inadequate foundation will result in uneven settlement, cracking of plaster or bathroom tile, ill-fitting doors and windows and other difficulties which will offset, to some extent, the advantages of good work in the superstructure.

Pier or column footings under girders of the average building carry loads much greater per square foot than do those under foundation walls. A dwelling with one girder and one supporting post at the center is illustrated in Figure 1. A post footing 2 feet square under

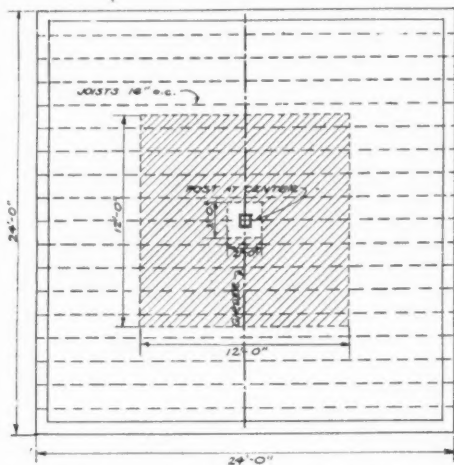


Fig. 1. A Post at the Center of a Girder in a House, Framed as Above, May Support One-fourth of the Total Weight of the Building. Ten times the weight per square foot carried by the wall footings.

such circumstances will often carry ten times the weight per square foot that is carried by the wall footing. According to the principles developed in the discussion of columns, if the building shown weighs 50 tons,  $12\frac{1}{2}$  tons are carried by the center footing alone. This, for a footing 2 feet square, which is not unusual, is over 3 tons per foot; and may be more than the soil will carry without settlement. On the other hand, the  $37\frac{1}{2}$  tons carried by the wall footings, because of their greater area, will amount to only about a quarter of a ton per foot. The load on each pier footing should be figured, and footings should be made large enough, to

carry loads per square foot that will not exceed those given.

The following should be carefully observed in all footings:

1. Footings should be of ample size, as follows: For hardpan or very firm, well-drained soil, not less than 1 square foot of bearing area for every 4 tons weight; for firm, well-drained sand or clay, 2 tons per square foot; and for wet sand or clay, or for loam, not over 1 ton per square foot. This rule can be modified slightly where local experience justifies it.

2. Depth of pier footing should be equal to about half its longest side unless it is reinforced with steel rods. (For this reason, square pier footings are more economical.)

3. Excavations for all footings, particularly pier footings, should be carried below the soft loamy surface soil.

4. In sections where frost prevails, outside footings should extend below any possible frost line. This will range from  $1\frac{1}{2}$  feet to  $3\frac{1}{2}$  feet or even more below grade, according to locality.

5. Tile drainage, level with the footings, should be provided on the uphill side of all foundation walls built into a side hill, or where there is evidence of springs, or where experience in the locality indicates possibility of trouble from ground water. (See Fig. 2.) If tile drains are provided, they must be continued to some suitable outlet where the water which collects in them can run off freely.

6. Because of likelihood of settlement, no permanent building should be erected on fresh fill. For deep fills, two years or more should elapse before building; and then the footings should be increased in size from half again to double the normal size. In extreme cases, steel reinforcement is required. It should be remembered, for such conditions, that the pier footing is the weakest spot. In such cases an engineer experienced in foundation work should be consulted.

7. The underside of footings should be flat and horizontal. (See Fig. 3.)

The best of materials and workmanship for plaster and interior trim will fail to give satisfactory results unless the underlying framework of a building is strong and rigid. Durability, tornado and earthquake resistance, freedom from cracks and settlement, all depend in part on a good framework.

\*Being Chapter I of the new book, "Light Frame House Construction," issued by the Federal Board for Vocational Education, J. C. Wright, Director, in co-operation with the National Committee on Wood Utilization, Axel H. Oxholm, Director, U. S. Department of Commerce, Washington, D. C.; reprinted by permission.

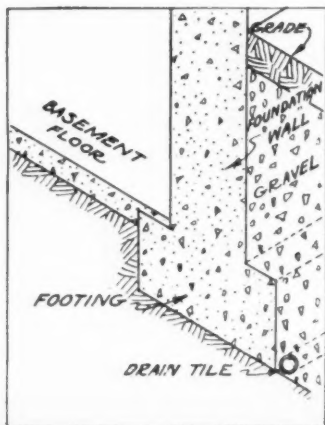
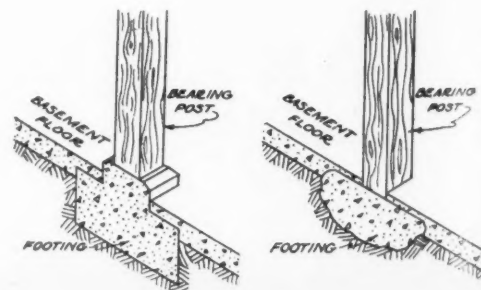


Fig. 2. To left. In Damp Soils a 4-inch Tile Pipe Should Drain the Footing and Discharge Into a Suitable Outfall.

Fig. 3. To right. Broad and Flat Footings for Foundation Walls and Basement Columns are Much More Effective in Preventing Settlement than are Undersized Footings with Rounded Surfaces.



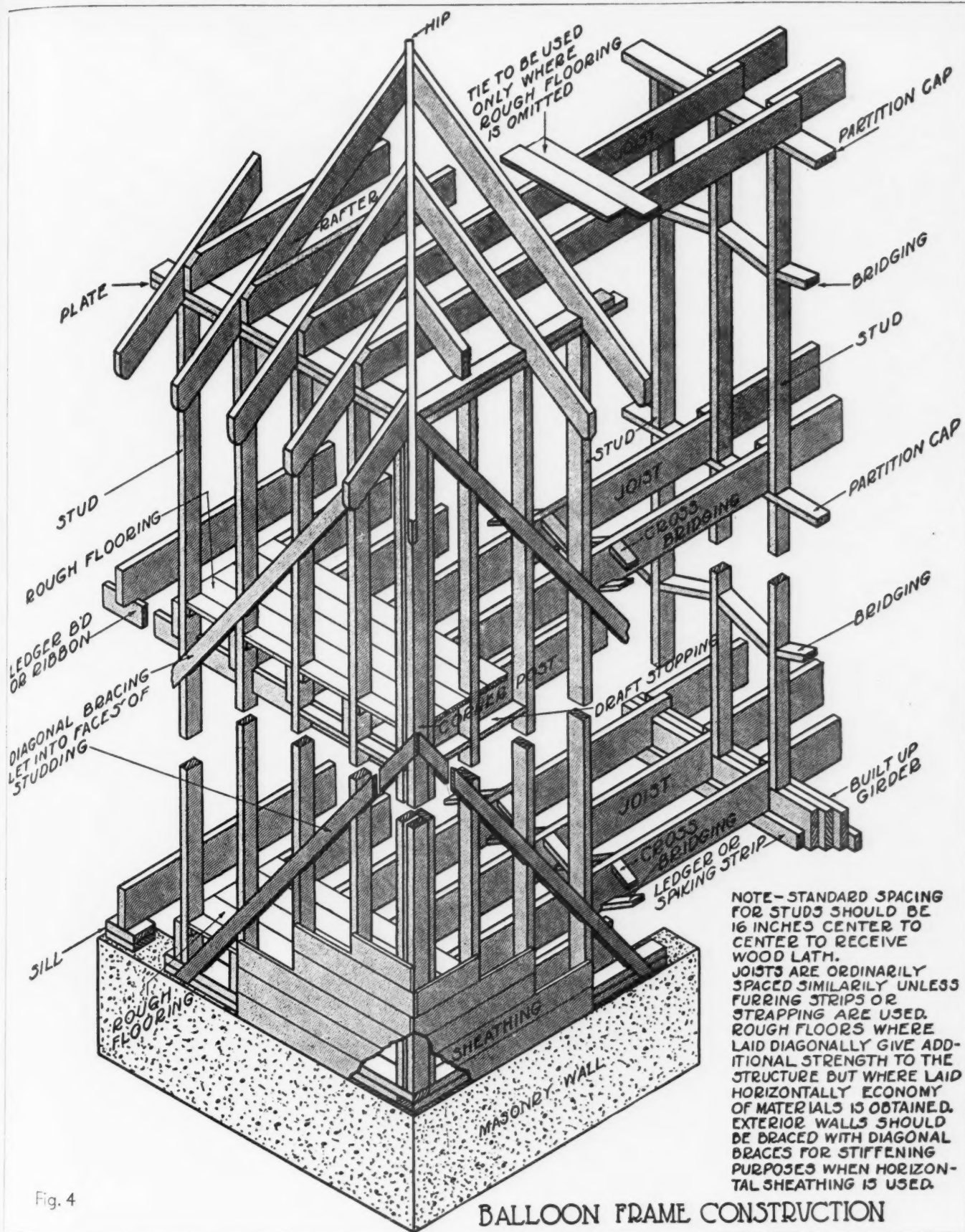


Fig. 4

## BALLOON FRAME CONSTRUCTION

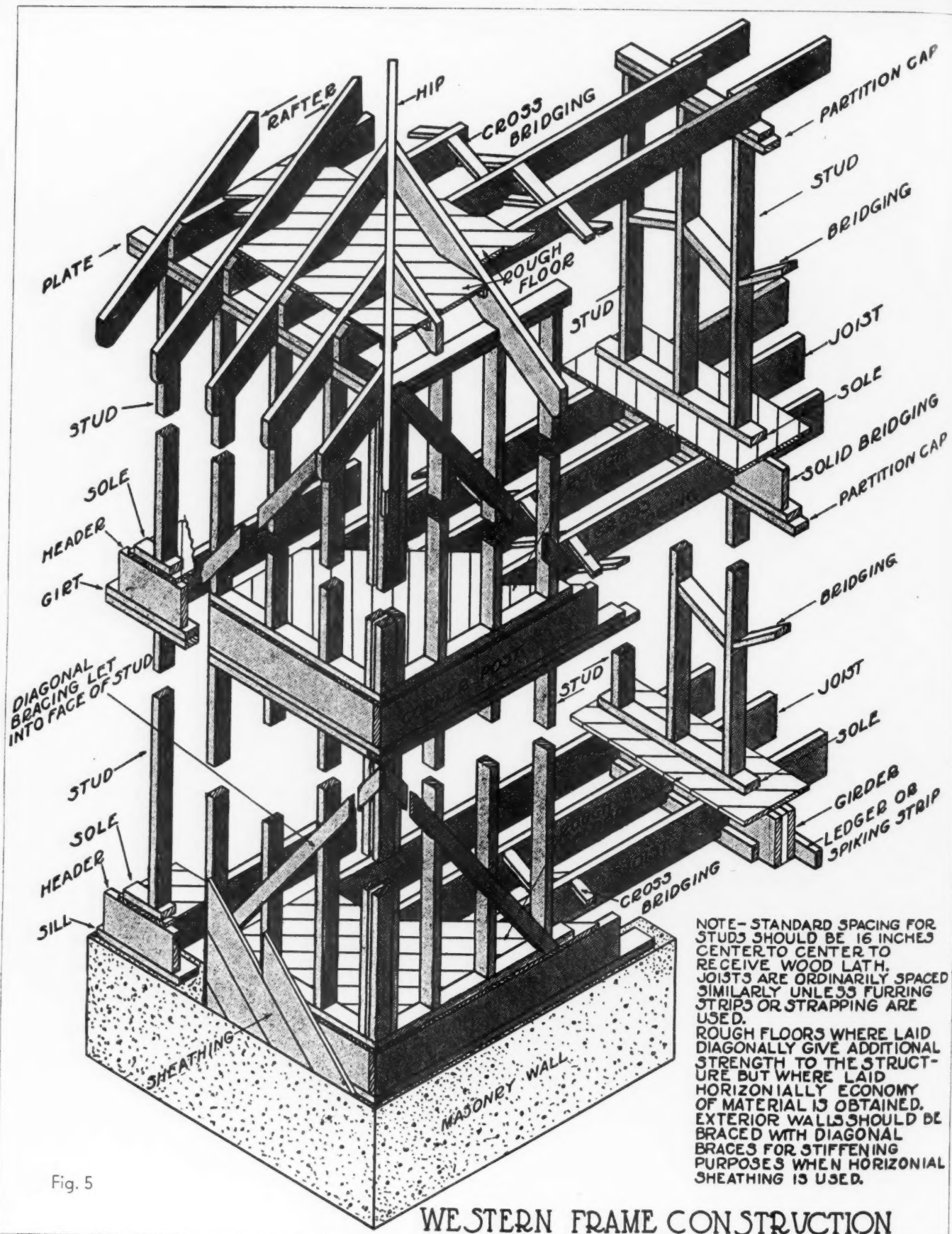
No two men will frame a building in the same manner, nor is there general agreement among carpenters as to which is the best framing for a given condition. Light frame construction, however, may be classified into three more or less distinct types: 1. Balloon frame, 2. Western or platform frame, and 3. Braced frame.

Combinations of these types in one building are some-

times made, but usually are not advisable for reasons which will appear hereafter.

The principal characteristic of balloon framing is the use of studs extending in one piece from the foundation to the roof; the joist ends being nailed to the studs, and also supported by a ribbon or ledger board let into the studs. Figure 4 illustrates the balloon type.



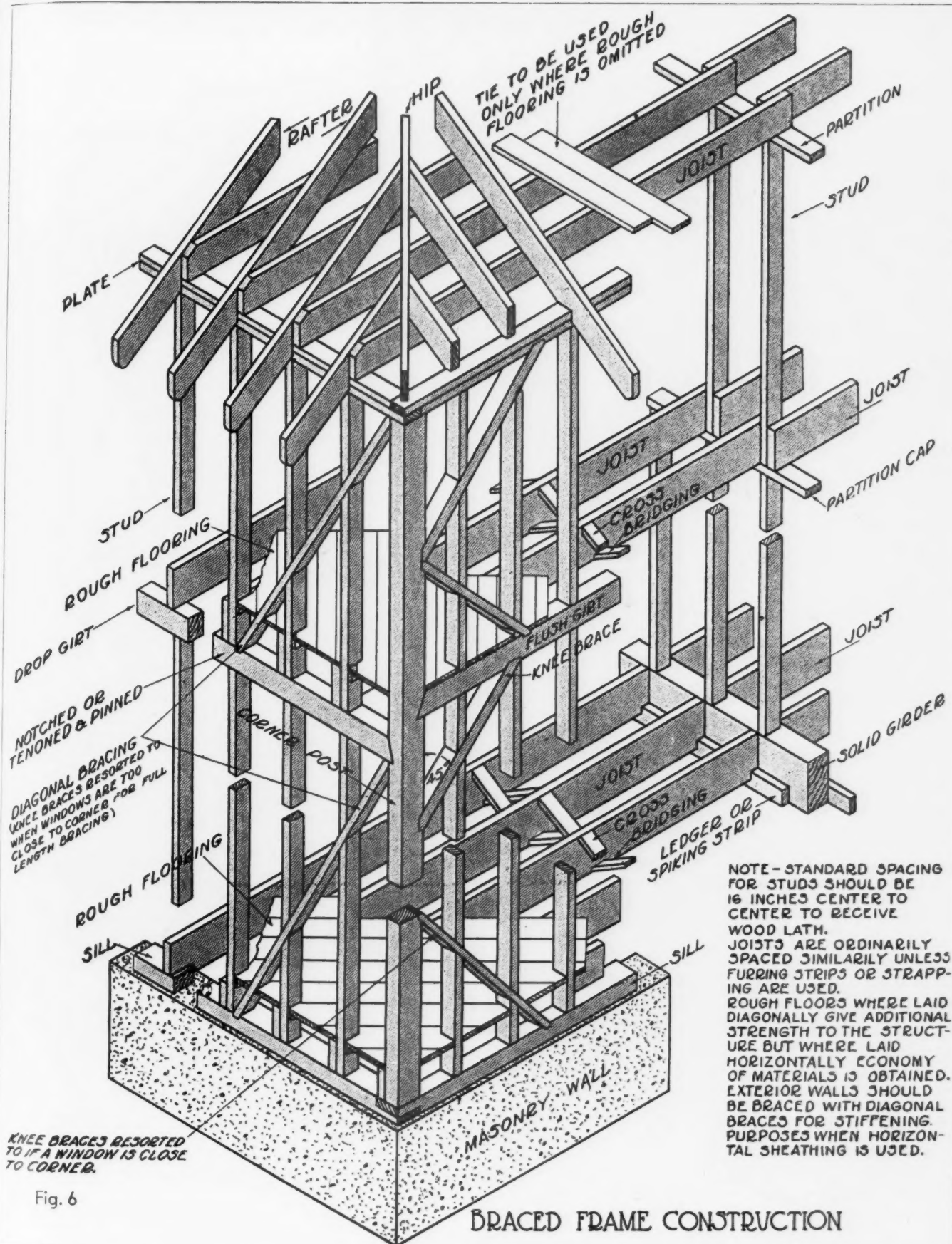


The platform or western frame type, Figure 5, is distinguished by floor platforms independently framed; the second and third floors being supported by studs one story in height. Its chief merit, in strictly all-lumber construction, lies in the fact that if any settlement, due to shrinkage occurs, it will be even and uniform throughout and so be unnoticeable. This type should

be avoided with brick veneer or with masonry-walled buildings for either outside or inside construction. Special framing methods are necessary around chimneys, whether interior or exterior, and special precautions should be taken in flashing around chimneys and vents.

The braced frame (Fig. 6) is the oldest type in this country, having been brought over from England in





colonial times. Though in considerably modified form, it is still followed in certain sections, notably in the New England States. Originally, this type was characterized by heavy timber posts at the corners, often with intermediate posts between, all of which extended continuously from a heavy foundation sill to an equally heavy plate at the roof line. At the second story were

introduced heavy timber girts running from post to post, carefully mortised and tenoned with oak pins. The studs, therefore, served merely as fillers, making what we now call curtain walls.

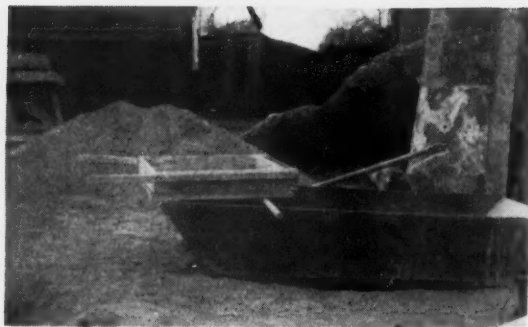
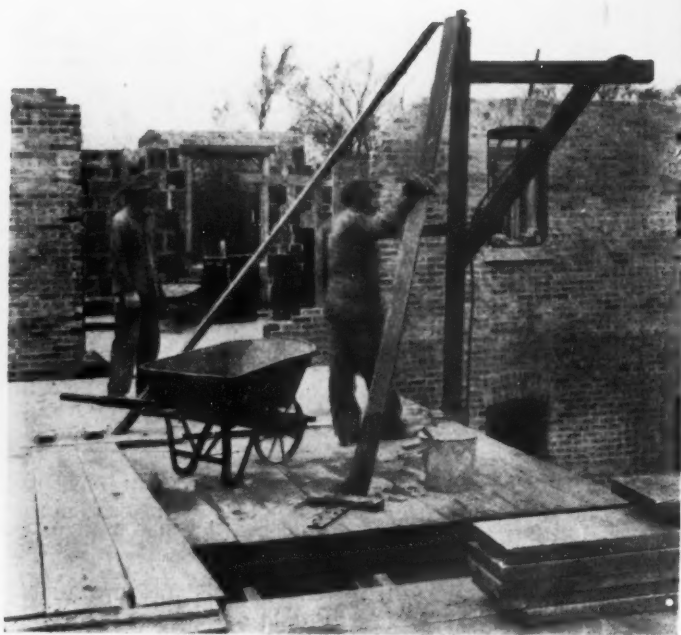
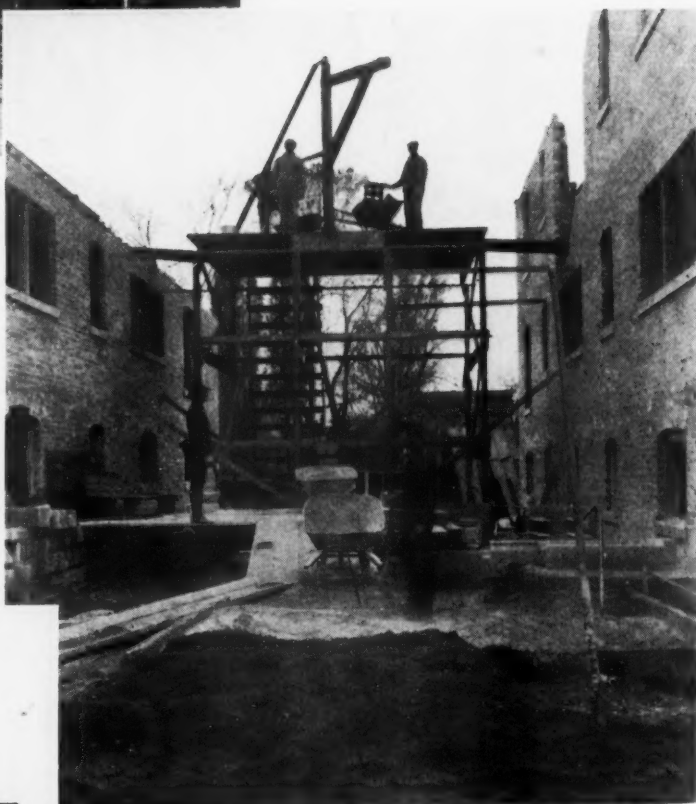
With the introduction of cheap nails, modern tools and hardware, the type has gradually been modified and is still undergoing change.



**BRANCH INCLINE** facilitates handling of materials on this Madison, Wisconsin, job of the Way Building Company.

This is the first of a series of "On the Job" photographs showing how American builders work. The editors will welcome job shots from readers.

**PLATFORM DERRICK** used by Robert L. Reisinger, South Bend, Indiana, in apartment construction.



**SAND SCREEN**, light-weight, homemade variety used by A. Fleischer, Albuquerque, N. M.

**DERRICK** used to hoist materials, top of platform. Note sound construction, safe runways, convenience for working into both buildings.



WITH BUILDERS

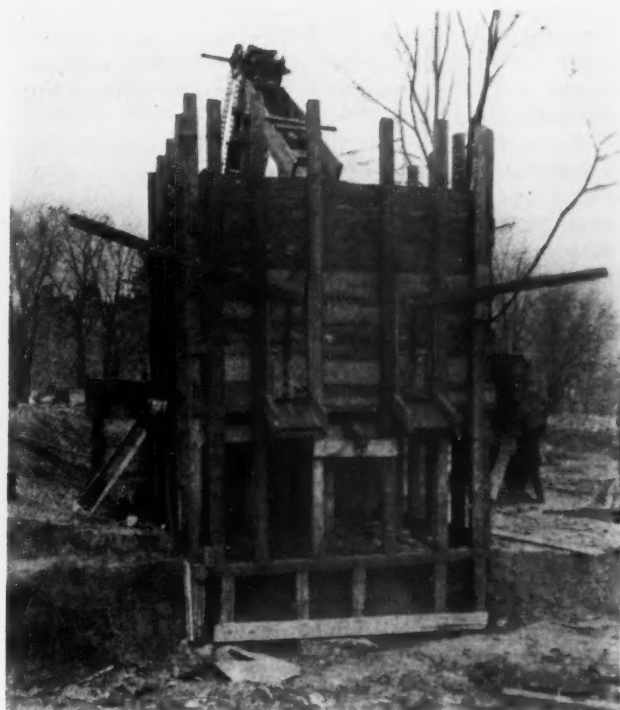
# Materials

**PLACING CONCRETE** by wheelbarrow on residence at Albany, New York. David Graun, Builder. Note U-shaped plank runway to facilitate.



**LONG RUNWAY** placed for use of hod carriers instead of ladder. Enterprise Building Company, erecting apartment building in Providence, R. I.

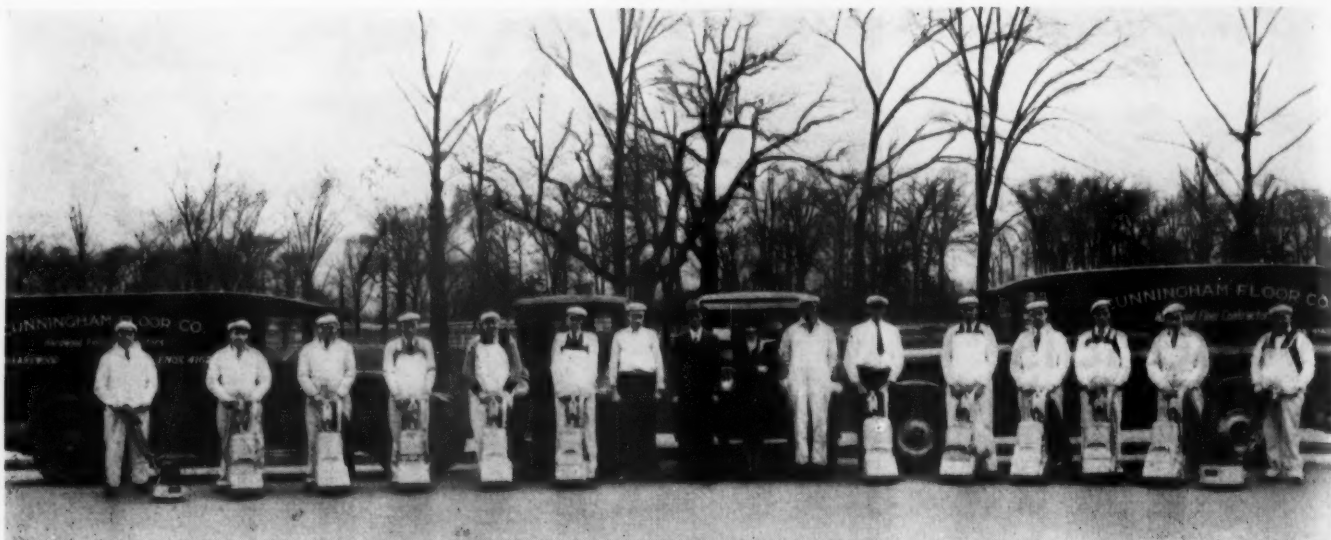
**MATERIAL STORAGE HOPPER** built on the job by Hegeman Harris Company, Nashville, Tennessee. (Left below.)



**SAND SCREEN** used by John Hill, Pittsburgh, Penn. Lightweight, easy.







This Large Organization Was Built Up in Five Years by Mr. Cunningham, Who Furnishes and Installs Plank, Parquet and Strip Floors, Resurfaces and Refinishes Old Ones in Detroit, Mich.

## The Success Story of Fred Cunningham, Floor Contractor



In Five Years Fred Cunningham Rose From a Man with a Job to a Man with a Business—An Independent, Prosperous, and Growing One. How he did it is a story that is particularly applicable today to those men in the building industry who have come through the depression with their faith in the future still buoyant. It is a story that will be repeated many times in the next years.

THIS is a story which will probably be repeated thousands of times in the next few years in this country where men with brains, ambition, and willingness to work are constantly coming up from the ranks to independent control of a business of their own. It is a story that is particularly worthwhile right now, when so many men in the building business are discouraged by the two lean years that have passed and are wondering whether it holds any prospects of better fortune for them in the future.

For those who need encouragement, the story of Fred Cunningham will be a real stimulant. Five years ago he was working in Detroit, Mich., on a salary, with nothing but his native American ability and a desire to get ahead. Today he is the head of a prosperous floor contracting business in the same city, giving constant employment to fifteen men, and is the owner of the dozen or so floor surfacing and polishing machines, four motor trucks and other equipment necessary for the conduct of a good-sized business.

The conditions that made Fred Cunningham able to build up a successful business of his own are being repeated in the industry today and men with the same initiative and drive will do again what he did. That is why the building situation is not as gloomy as some would paint it. For two years residential construction has been at unusually low levels. But while building has lagged, wear and tear, fire, depreciation, and obsolescence have continued with unabated activity. Population has increased; people have been saving money instead of putting it in the stock market. This means that before long there will be a new and increased demand for houses, which will bring increased work for floor contractors. In addition, a new field is being opened up for men in this business in the resurfacing and polishing of old floors; this, too, means more business. Many readers of AMERICAN BUILDER AND BUILDING AGE will want to follow the course set by Mr. Cunningham. Here are the details of his trip to success:

A cabinet-maker by trade, Fred Cunningham spent 25 years working in various kinds of wood. In 1925 he was just like millions of other employed men in this country, anxious to own his own business but unable to get a start. He must have been

a valuable and loyal employee, however, for the builder for whom he worked showed great confidence in him.

At this time the builder was having a great deal of trouble with his residential floors, and Mr. Cunningham persuaded him to put him in charge of this work. After considering the matter from all angles, the builder bought an inexpensive sanding machine and put Fred in complete charge of the work. In one way it was a generous thing to do, but in another, it was simply good business. Cunningham, as an independent floor contractor, did just the kind of work wanted. He puts it:

"I started out with the resolution to look at every job as a special job that should receive my very best care and workmanship. I made every effort to give quality work, and took the same interest in every job as I would if I were having the work done for myself."

This splendid ideal must have paid, for in a little while, he relates, his work started to increase and kept on until he bought the equipment his builder friend had started him out with. He continued to do such good work that more business came in, making it necessary for him to add more equipment. He says:

"We tried to do our work in such a manner that we could go back and look any client straight in the eye, knowing we had a satisfied customer. We aimed to keep the best equipment that could be bought, and give every client the best possible job that mechanical training and honest efforts could produce. Through these efforts we held our clients year after year, and our business has steadily increased."

Today Fred Cunningham is head of the organization of men and equipment shown in the picture at the start of this article, and in addition to sanding and scraping floors, he sells strip, plank, and parquet flooring and does the entire work of laying, finishing, waxing and polishing. Some of the important jobs he has done in the Detroit area include the Intramural Athletic Building, Ann Arbor, 140,000 square feet; Jefferson Beach Dance Hall, 22,000 square feet; alteration job, General Motors Building, 76,000 square feet; display room, Chrysler Motor Corporation, 54,000 square feet; Parke Davis Company cafeteria, 12,000 square feet; Hudson Motor Company, office alteration, 11,000 square feet; Packard Motor Car Company, trim room, 13,000 square feet.

In addition Mr. Cunningham's organization has done the plank and parquet floor work on such residences as that of O. I. Currier, Grosse Pointe Farms; Lee Baker, banker, and J. L. Park, also of Grosse Pointe Farms; Bruce Anderson, Lansing, Michigan; Harry H. Wolfe, Toledo, Ohio; Bernard Kuhn, St. Clair, Mich.; Fred Paterson, Orchard Lake, Mich.; and many others.

Cunningham has specialized in new floor work, but

**THE HISTORY OF THE PAST  
POINTS THE WAY FOR THE  
FUTURE. AMERICAN BUILDER  
AND BUILDING AGE WANTS  
MORE STORIES LIKE CUNNINGHAM'S.  
SEND YOURS AND GET A CHECK.**



Instead of Working as a Cabinet Maker, as He Did For Many Years, Mr. Cunningham (Shown at the Right) Now Directs His Crew of Men in the Performance of Such Jobs as This One—Resurfacing the Floor of the Chrystal Ballroom, Book-Cadillac Hotel, Detroit.

points out that especially in the spring there is a large demand for refinishing of old floors in homes that are being modernized. He also does quite a bit of floor waxing and polishing, but has not gone after this branch of work very strongly, although he considers it a good field.

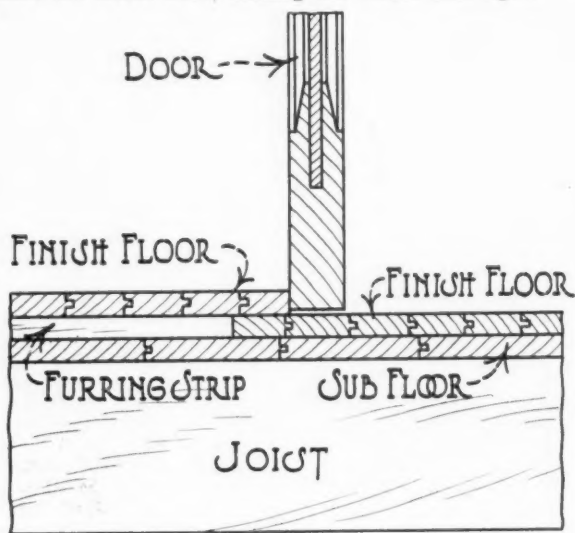
Advertising of the business is done by sending blotters with a picture of the organization as shown above, to architects and builders. An advertisement is also carried in the classification section of the telephone directory. Mr. Cunningham points out that the greatest volume of his work comes from repeat jobs from regular customers and new clients obtained through recommendations of men who have liked his work.

This is essentially the story of Fred Cunningham's rise from cabinet maker to prosperous business man, but there are a few more facts for those who are interested in the situation as it is today. Most men start out primarily to specialize in smoothing up and sanding newly laid floors, but as a result of the great modernizing movement that has swept the country, they have found an increasingly large field in the resurfacing of old floors. It is possible for men with no more capital than Fred Cunningham had to start business, due to the liberal terms on which equipment is sold, which allows the contractor to pay for it after he has got his business under way. In addition, advertising material, post cards, folders, business cards, and advice and information on ways of building the business are supplied with the equipment, if it is desired.

# Practical Job Pointers

## Make Closets Dust-Tight

THE sketch shows an idea which helps to make a house more desirable and so easier to rent or sell. Before applying the finish floor in all closets, I nail furring strips at every joist, over the sub-floor. I then apply the finish floor over these furring strips, making the closet floor one thickness higher than the room floor. The closet door then closes against the closet floor, making the closet dust-tight.



A Raised Floor in the Closet Keeps Out the Dust.

FRANK L. LIZA, 1471 Dixwell Ave., Hamden, Conn.

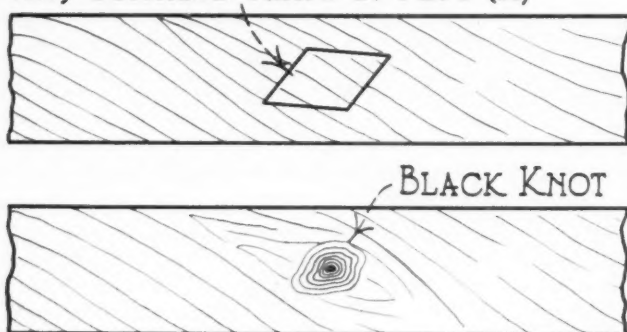
## To Patch a Bad Knot Hole

IN order to do a good job of patching black knots in furniture or any wood work, cut out the defect in any suitable shape and size, but preferably a diamond shape as glue holds better in the sharp angles. Select a piece of the same wood, with grain as nearly like the piece to be patched as possible. Chalk the edges of the hole, lay the other piece on it with the grain parallel, and strike with a hammer.

Saw carefully to the lines obtained in this way on the patching piece, bearing in mind that the line is the outside of the hole. The patching piece will then fit perfectly and, because of its shape, can be glued firmly in place.

FRED VANDER WERFF, Box 217, Lansing, Ill.

## ANY SUITABLE SHAPE OF PLUG (A)

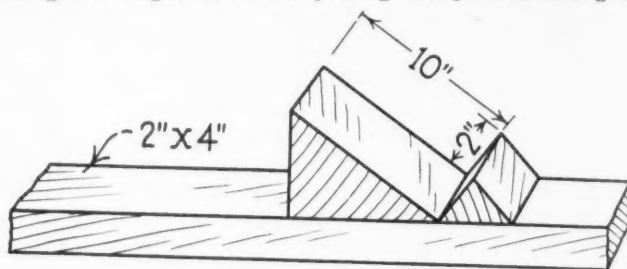


A Patch of This Shape Can Be Glued Securely and Matches the Grain.

A Readers' Exchange of Tested Ideas and Methods, Taken from Their Own Building Experience. Two Dollars Will Be Paid for Each Contribution Published in This Department.

## Jack for Cleaning Bricks

A FORM or jack, for holding brick when it is necessary to clean old mortar off them, is shown in the sketch, which is self-explanatory. It is made of a length of two by four and two blocks nailed onto it. I have used this jack for quite a while and find it very convenient. Since the idea was original with me it is probably not known to many and I thought it might be worth passing along. The triangular



This Is Handy When You Have to Clean Old Mortar Off of Bricks.

shaped blocks are also cut from two by four.

M. E. COUCH, 1610 Thayer Ave., Little Rock, Ark.

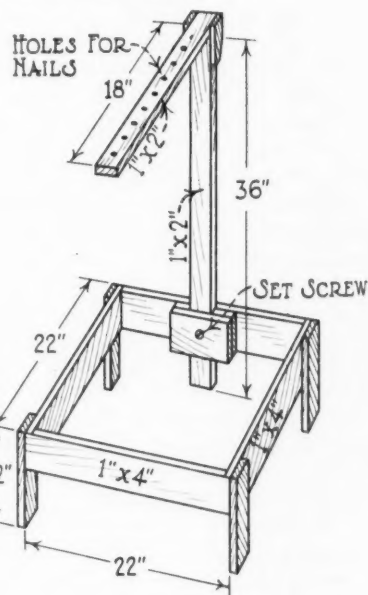
## Screen Drying Rack

THE sketch shows a rack which I have found very useful for holding screens while the paint is drying. The upright piece, with the overhanging cross bar, is adjustable to the height of the screens. It is kept in position by means of a common wood screw. There is a row of small holes in the cross bar, spaced two inches apart, and large enough to allow an eight-penny nail to drop into them loosely but not large enough for the nail head to drop through.

For use, the upright is adjusted so that the cross bar is at a height above the base one inch greater than the height of the screens to be painted. When the first screen has been painted it is placed under the cross bar leaning against the upright. A nail is dropped into the first hole and the second screen leans against the nail. Another nail is dropped for the third screen, and so on till the rack is filled.

It is well to have two of these racks so that one can be adjusted for the first story windows and the other for the second story windows, which are usually of different height. For drying whole window screens, the screens can be placed crosswise to fit into the rack.

H. N. ROWLAND, Parkerford, Pa.

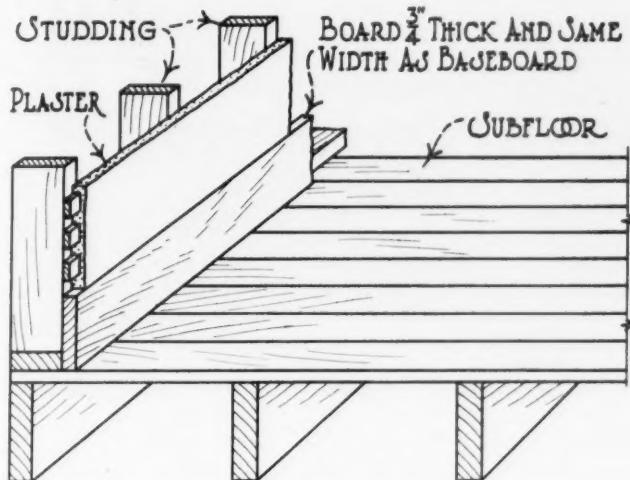


A Simple Drying Rack for the Screen Painter.



## For Nailing Base-Board

IN the November issue, the Practical Job Pointers Department contained an item on nailing base-board. This method was all right but here is a better one. Nail a strip of  $\frac{3}{4}$ -inch board to the studding, fitted down against the sub-flooring. This board should be the same width as the base-board. The  $\frac{3}{4}$ -inch thickness is the same as that of the lath and plaster so that this board services as a guide in applying the plaster.



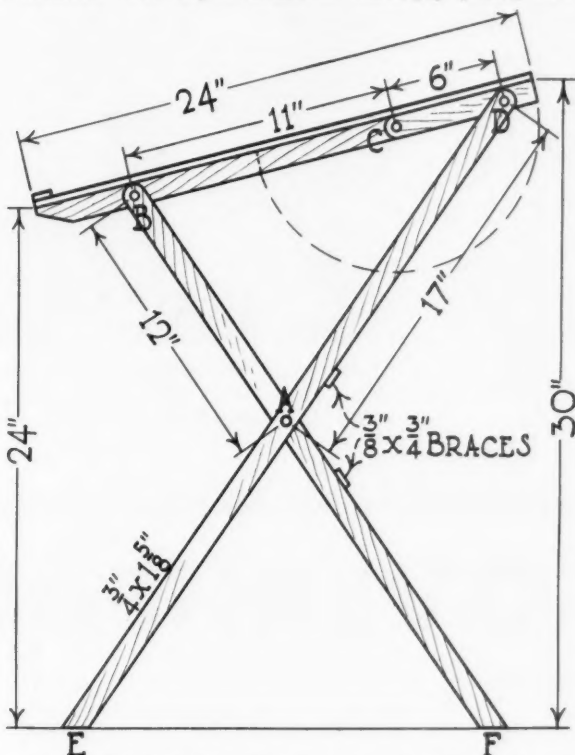
The Board Nailed to the Stud Forms a Base for Nailing the Base-Board.

This forms a nailing base for the base-board so that it can be nailed securely at any point without trying to nail to the studs. It also serves to butt the finish flooring against and gives better results and easier work in floor laying.

E. K. STEIN, 4517 159th St., Flushing, N. Y.

## Convenient Portable Drawing Table

THE sketch shows a light, portable drawing table that I have found very popular among builders. It folds flat and so can be carried easily from the office to the job or wherever wanted. The top is made of three-ply panel, screwed



This Table Folds Flat and Can Be Carried Anywhere Quite Easily.

securely to two pieces of  $\frac{3}{4}$  by  $1\frac{5}{8}$ -inch pine. The legs are of the same size material. The "link" D-C is fastened at C to the top frame and at D to the leg with  $\frac{1}{4}$ -inch carriage bolts.

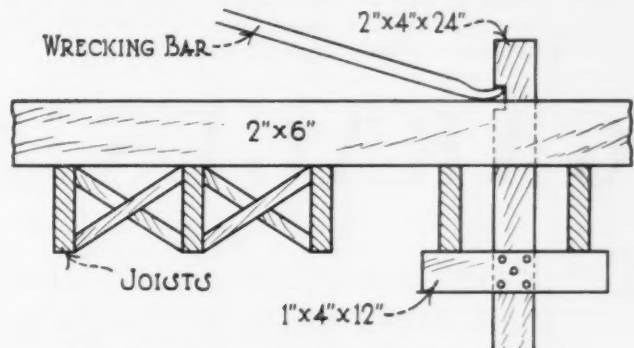
The dimensions shown are suitable for use with a chair. In altering these dimensions to obtain other heights it is necessary to retain the relative dimensions: A-B plus B-C equals A-D plus D-C. The legs should be braced at the back, D-E being above A, and B-F below A, with  $\frac{3}{8}$  by  $\frac{3}{4}$ -inch material.

J. E. DEALY, 3644 W. Vernon Place, Los Angeles, Cal.

## Leveling Joists for Bridging

IT is necessary, sometimes, to force floor joists up to a common level when applying bridging. The simple device shown in the sketch is very effective for this and is quickly made. I first lay a piece of straight two by six, on edge, across the span of joists, parallel with the row of bridging that is to be applied and about a foot from the center of the span.

Next take a piece of two by four about two feet long and nail to it a piece of one by four, as shown in the sketch. Saw out a notch near the opposite end of the two by four. Place this clamp with the cross piece under the joist and with the notch barely protruding above the two by six. With a wreck-



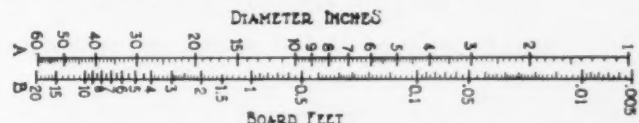
Here Is an Easy Way to Jack Joists Up Level.

ing bar hooked into the notch, and the two by six as a fulcrum, it is an easy matter to force the most stubborn joists to their proper level and hold them till firmly spiked to the two by six. The two by six then holds them until bridged.

PAUL F. ENGEL, Route 1, Hanceville, Ala.

## Finding Board Feet in a Disc

EVERY once in a while we find it necessary to know the number of board feet in a circular disc, such as might be used for a tank, vat or barrel head or a circular cover, or some such purpose. In fact circles are common in building. The scale shown in the sketch, shows at a glance the number of board feet in a circle of any diameter varying from one to sixty inches, and one inch or less thick.



This Scale Shows Instantly the Number of Board Feet in Any Disc.

For example, to find the number of board feet in a disc 30 inches in diameter and one inch thick. Find the figure 30 in the column A and the opposite point in the column B, which in this case is five, is the correct number of board feet. In other words, simply find the diameter in inches in the column A and the opposite figure in column B is always the number of board feet in an inch thick disc. For a disc more than one inch thick simply multiply by thickness in inches.

W. F. SCHAPHORST, M. E., 45 Academy St., Newark, N. J.



*There's a beautiful Crawford Overhead Door model to harmonize with every architectural design! Special designs available at moderate costs. Above is a typical two-door installation.*

## GARAGES STYLED FOR

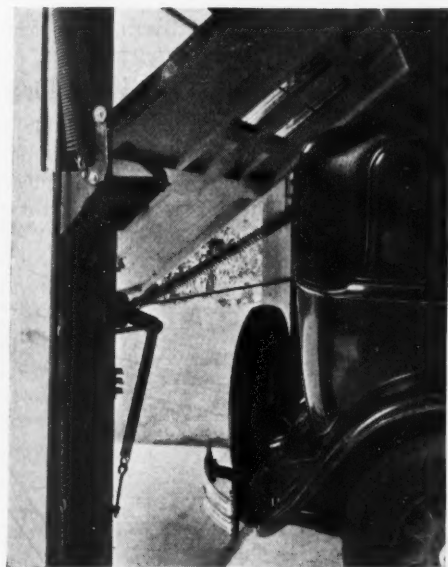
With the introduction of the unique new Crawford Overhead Door, *beauty* now becomes an asset available for every garage. *The sales possibilities are enormous!*

Crawford Overhead Doors are made in a variety of the most artistic designs, yet are offered at a cost far *below* the average!

### *Simplified Operation . . . Low Price*

The patented mechanical design of the Crawford Overhead Door is amazingly simple. Doors are installed *in one piece!* In opening, they lift straight up 2 inches, then roll smoothly and silently overhead. Rugged, weathertight, easy to install and operate.

Due to this simplicity, Crawford Overhead Doors can be offered at list prices as low as \$39.50!



*The Crawford is the original one-piece overhead door. Easily installed by one man. Hardware comes ready-attached to 2" x 4" wood struts.*

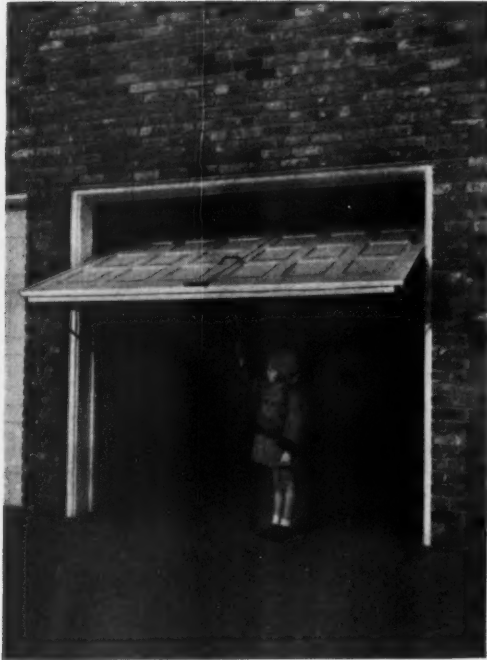
# CRAWFORD OVERHEAD

Made by CRAWFORD DOOR COMPANY, Detroit, Mich.

*Distributed East of*

**PAINE LUMBER COMPANY, LIMITED**

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE

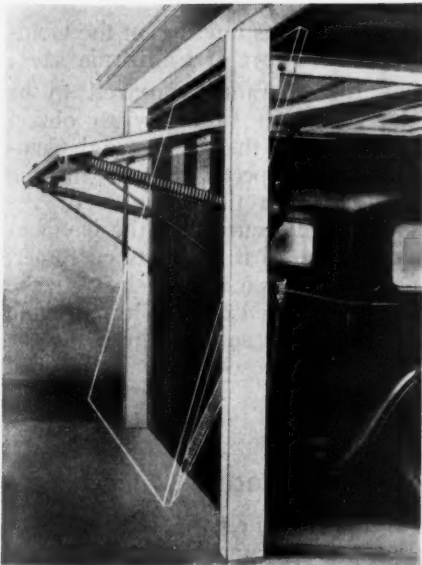


The standard model Crawford Overhead (shown above) list only \$39.50 complete with hardware, less lock, f.o.b. factory.

# FINEST ARCHITECTURE

*with*

## CRAWFORD OVERHEAD DOORS



Lifts straight up 2 inches to clear ice and snow. Then rolls smoothly overhead and inside the garage. Only 4 inches headroom required.

To adapt present hinged doors or new doors of special design for modern overhead operation, separate Crawford Overhead Hardware is readily obtainable.

***A Quality Product . . . Investigate!***

All Crawford Overheads are supplied in No. 1 Pine with finest workmanship throughout. Their beauty, simplicity, quality and economy combine to make them the biggest sales opportunity in the field today.

Ask your lumber dealer or mail the coupon for complete information.

# DOORS • DETROIT • MICHIGAN

*Rockies by*  
**OSHKOSH, WISCONSIN**

Paine Lumber Co., Ltd.,  
Oshkosh, Wisconsin.

Please send me complete information on the new Crawford Overhead Door.

Name .....

Address .....

☐ Architect ☐ Lumber Dealer ☐ Builder ☐ Prospective Owner

A-3



# Questions of Law Clearly Answered

Legal Rulings of Interest to All Builders

By M. L. HAYWARD

## Costly Neglect

**A** BUILDER gave Black a note, and Black pledged it to a West Virginia bank as collateral security for a loan.

When the note fell due, Black demanded payment from the builder.

"The note is in my safety deposit box at the bank, and I'll mail it to you tomorrow," Black agreed—and the builder paid the note.

Black, however, did not pay his note to the bank, the bank sold the pledged note according to the terms of the collateral agreement, Green bought the note, sued the builder, and the latter set up the defense that the note had been paid.

"It is very unfortunate that the builder paid Black without demanding his note. In giving the note he was bound, however, to take notice that someone other than the payee might legally possess it at maturity. The builder, therefore, paid Black and accepted Black's excuses for not producing the note at his peril," said the West Virginia Court of Appeals, in deciding that the builder was bound to pay the note the second time.

## When Is a Guarantee Valid?

**T**HE contractor had just signed up a contract for the consolidated school building and was discussing the matter with the president of the Mejax Lumber Company.

"I see that you have to give the usual guarantee, signed by at least one good and responsible party, providing that you will carry out your contract according to the terms thereof" the president suggested.

"That's the point, and the only question is, who will I get to sign that guarantee?" the contractor queried.

The president tapped the blotting pad with his pencil, and made no attempt to follow the convenient lead.

"I'll need at least \$130,000 worth of lumber if I get the contract," the contractor remarked.

The president "bit."

"And we can sell you better lumber at a closer price than any other concern in the State of Texas," he declared.

"If your company will sign that guarantee for me, I'll buy every foot of the lumber from you," the contractor declared. "If I don't land the contract, the Brewer Construction Company gets it, that's a settled point, and you can imagine how much lumber you'll sell them with that big mill of their own up at Swan Siding."

Half an hour later the contractor departed, bearing with him the guarantee of the Mejax Lumber Company, under its corporate seal, and signed by the president and general manager.

Three months later the contractor fell down on the job, and the creditors were howling around the office of the president of the Mejax Lumber Company.

"You signed a guarantee and you've got to stand behind it," was the chorus of the creditors' song.

And the president consulted the company's attorney.

"Forget it," the attorney advised—evidently relying on the case of Bowman Lumber Company vs. Pierson, 221 Southwestern Reporter, 930, where the Supreme

Court of Texas ruled that a company authorized to deal in lumber generally has no power to guarantee a contract of a third party merely for the purpose of enabling the lumber company to sell lumber to that third party.

"The pledging by a company of its credit for another's benefit as a means simply of enabling him to purchase its goods, is not a direct, and hence not a legitimate means of promoting its own business," said the Court in the Bowman case, and there are a few other courts which have arrived at the same conclusion.

It was lucky for the Mejax Company that it was in Texas, however, as the weight of authority is that such guarantees are generally binding, and there are Illinois, Michigan, Minnesota, New York, Oregon and Wisconsin cases upholding this rule.

An outstanding case where the guarantee was upheld is Woods Lumber Co. vs. Moore, a decision of the California Supreme Court reported in 191 Pacific Reporter, 905. The evidence showed that the Goldstein Company was selling "movie" costumes to the Continental Company, and, in order to sell such costumes the Goldstein Company guaranteed an account of the Woods Lumber Company for lumber used in the production of the film, in which the costumes were to be displayed.

In ruling that this guarantee was binding on the Goldstein Company, the Supreme Court of California says:

"In a business view the guaranty appeared to be essential to enable the Goldstein Company to obtain payments upon its contract with the Continental Company. It was to be reasonably expected that the making of the guarantee would advance the business of the Goldstein Company, and would secure to it the payment of the debt that would be due to it from its customer, the Continental Company. It was a thing helpful to the conduct of its business, and tended directly to promote the same. All of these things are sufficient to bring the contract of guarantee within the scope of the implied powers of a corporation."

## Cash and Credit

**I**F A gives a builder a check on the C bank, the builder must present the check for payment at the bank on which it is drawn. If, however, he presents the check at the bank, and says, "I demand payment of this check in cash," and the paying teller says, "no funds," or words to that effect, he has a right of action against A on the dishonored check.

Suppose, however, that the builder does not demand the cash, but requests the bank to place the check to his credit, which the bank refuses to do. Is this a sufficient presentment?

"You should have presented the check and demanded the cash," A contends.

"If the bank wouldn't place it to my credit, they wouldn't pay the cash, and the refusal to credit it to my account was equivalent to a general refusal to pay," the builder maintains, and the courts have ruled in his favor on this point.

**Andersen**  
SASH PULLEYS

**Andersen**  
MASTER  
Frames

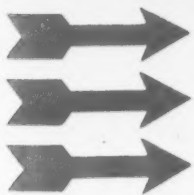
**Andersen**  
MASTER  
WEATHERSTRIP

**YOU** will be interested in this new invention by Andersen engineers, a metal weatherstrip which fits all Andersen double-hung window frames; reduces air leakage 86 per cent; eliminates all rattles, and sells to builders for considerably less than one dollar a set.

No special stock of sash or frames is needed . . . This weatherstrip is installed quickly and easily, without routing, rabbeting or nailing.

I regard Andersen Master Weatherstrips as a real contribution to good construction.

*Fred C. Andersen*  
President, Andersen Frame Corporation  
\* Patents Applied For



ANDERSEN FRAME CORPORATION, Bayport, Minnesota

AB

I am interested in the new Andersen Master Weatherstrip and would like to have ☐ detailed information  
☐ a demonstration and sample. I understand there is no obligation.  
 PLEASE CHECK: ☐ Architect, ☐ Builder-Contractor, ☐ Jobber-Dealer, ☐ Student

Name \_\_\_\_\_

Address \_\_\_\_\_

## Good Showmanship Pays

(Continued from Page 53)

associating your name with reliable, fair-priced work.

The builder's office today must carry out his flair for good showmanship,—in fact, it is one of the most effective ways. Move it up on Main Street, where it will be seen. Make it attractive inside and out,—an example of architecture and good building that will make prospects sure of the kind of work you do. Make it a headquarters for building information.

House plan books, magazines, and technical works on construction should be assembled for the use of your customers. Copies of *AMERICAN BUILDER* AND *BUILDING AGE* and other magazines showing pictures and floor plans should be available to stimulate the interest of visitors. Manufacturers' literature, describing new materials and equipment, should be on display, together with samples of the materials themselves.

Large signs should call attention to the builder's business, as they do to so many less important ones, including hot-dog stands. Electric signs are surely not uncalled-for expenditures when you consider that most any business of any size seems to be able to support them. Window displays that deliver your message effectively are worth the trouble and expense they cause. The miniature model home is very effective.

Banks, investment houses, public service companies, and many other local concerns are often glad to get free window displays. Why not make up an interesting model home display with photographs and floor plans which can be loaned and kept on the move from one part of town to the other?

Your business is of sufficient importance to interest the local luncheon and civic clubs. Take steps to get it before every one in town, through addresses either by members of your organization or by friends who can be supplied with the right information.

A camera should be part of the equipment of every contractor and builder. Take pictures before, during, and after construction and use them wherever possible. Picture displays in public places are of great value. These photographs can also be used in direct-by-mail work and in preparing a portfolio to use in selling. One of the best selling methods you can perform is to get prospects to look through a book of photographs of jobs you have done.

One stunt that is eye-catching and effective is to have your name boldly printed on the danger pennant hung on the rear of your motor truck.

Good showmanship means getting your name in every widely read advertising medium. The classified section of your telephone directory is one of the best. See that your advertisement is one that dominates the page and delivers an inspiring message.

Another good medium of advertising is the fence and wall of back-street buildings. Signs painted on your own property are inexpensive. It is also good business to make use of billboards and public display places in prominent spots. Street car and bus card advertising is effective—have you tried it?

Wherever large crowds assemble, there the man who knows his showmanship does his stuff. When the circus comes to town, you can get your name before the crowd through distribution of souvenirs, use of sandwich men or a parade float displaying a model home. This is also true at the county fair, agricultural exhibit, or carnival. A booth or display where information is given and booklets or souvenirs handed out pays well in publicity.

Of course, at the home building show, better homes exhibit, or construction congress, you will have displays that will adequately represent your organization.

Postmen, policemen, firemen, delivery boys, the ice-man, and public service representatives are good-will factors to be considered. It might be well to make a special attempt to court their approval of your business by some special means, such as donations to the policemen's or firemen's ball, to the postmen's pension fund. These men are very often called upon to recommend a builder; see to it that your name is the one they will mention.

We have left for the last possibly the most effective and most widely used method of keeping your message before the public. It is direct-by-mail advertising, or, in ordinary parlance, just good letter writing. Constant use of the mails to distribute your folders, special selling efforts, or inducements to buy, and information about the quality of your work is indispensable. Prepare small folders which can be distributed in many ways. One that has proved successful is to persuade the local gas or electric company to enclose them with their monthly statements. If you approach them with the argument that they are helping promote home ownership, you are very likely to secure this co-operation.

After all, good showmanship is pretty much a state of mind. You have a good product, a good service to offer; it seems a pity that it should not be told abroad in every way possible. If you are fully convinced of the value of the services you are rendering, you can hardly resist being a good showman, for it is only those who are ashamed of their work who want to carry it on by secret and devious ways.

## Boy Scout Camp Has Combined Water Tank and Lookout

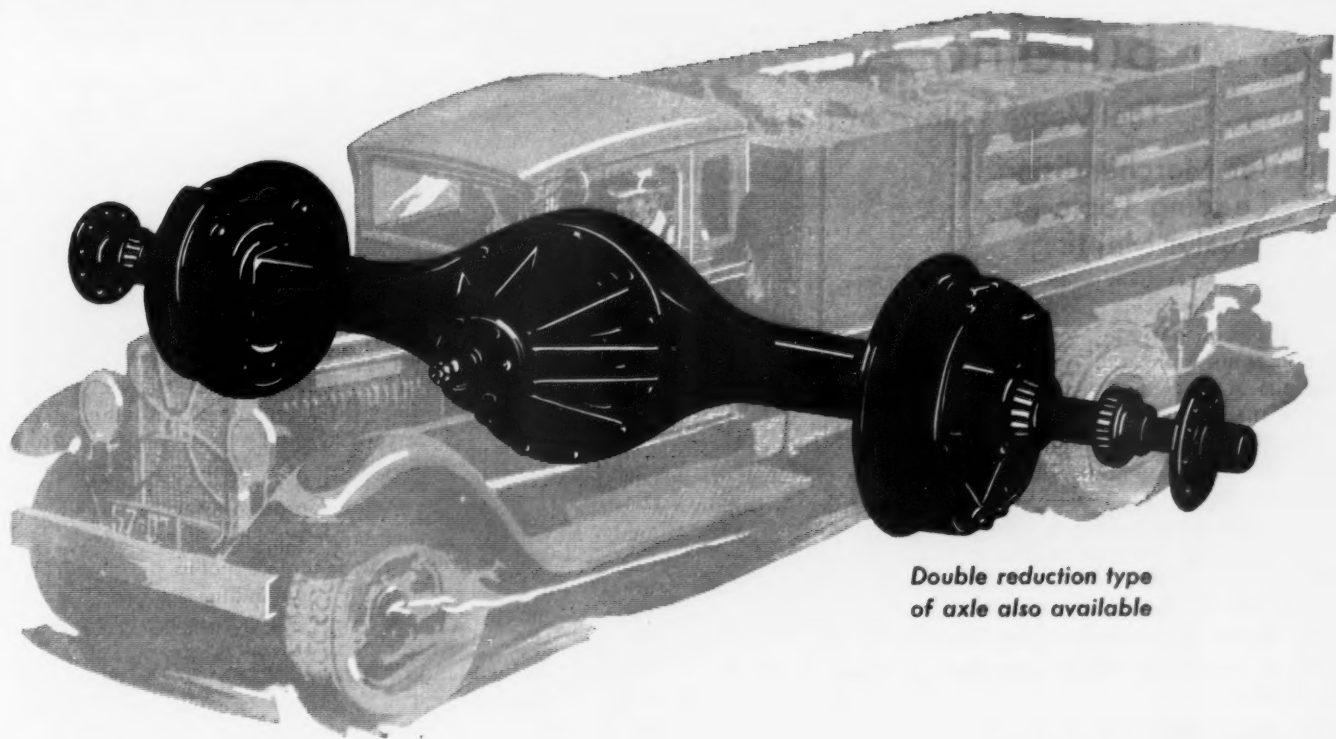
**W**ENTZ CAMP, which is located four miles northeast of Ponca City, Okla., is one of the best equipped boy scout camps in the country. It comprises 160 acres on which barracks have been erected and improvements made to accommodate a maximum of 1,000 boys.

One of the first things the visitor sees as he approaches the camp is the combined water tank and lookout. The spherical portion is 21 feet in diameter and holds 30,000 gallons of water which is used as a general supply for the camp. The tower or cylindrical portion is seven feet in diameter and 75 feet high. It encloses a circular stairway which extends through the tank to a platform or lookout 10 feet 6 inches in diameter. This observation point, which is 94 feet above the ground, is surrounded by a lattice fence and equipped with a telescope and search lights.



This Lookout Tower Contains a Tank Supplying Water for the Camp





Double reduction type  
of axle also available

## AXLES FOR HEAVY-DUTY WORK IN THE BUILDING INDUSTRY

From front bumper to rear frame cross-member, Dodge Heavy-Duty Trucks are "all-truck"—expertly-designed and precision-built for gruelling work in the Building Industry.

The rear axle, for instance, is the full-floating type. Weight of truck and load is carried by the housing—shafts are free to transmit power solely. Drive is through spiral bevel

gear. Pinion gear is straddle-mounted for greater strength and permanent alignment. All gears are of finest nickel alloy steel. There are nine large adjustable roller bearings in all—two at outer end of each shaft. Housing of the banjo type is of electric furnace steel.

See your Dodge Brothers dealer. See Dodge Heavy-Duty Trucks. Inspect them and compare them. You can buy the type for your needs complete with standard or special body to fit.

THE COMPLETE LINE OF DODGE TRUCKS RANGES IN  
PAYLOAD CAPACITIES FROM 1,200 TO 11,175 POUNDS—  
PRICED, CHASSIS F. O. B.  
DETROIT, FROM \$435  
TO \$2695, INCLUDING  
1½-TON CHASSIS AT

**\$595**

**DEPENDABLE**  
**DODGE HEAVY DUTY TRUCKS**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

# Building Activities

## The Month's News of the Industry

### Better Merchandising Is Leading Topic at Dealer Meetings

BETTER merchandising methods, and the financing of new homes were the principal topics of discussion at numerous state and regional conventions of retail lumber dealers, held during the past month.

The Northwestern Retail Lumbermen's Association met at Minneapolis, on January 20-22. The meeting opened with a discussion of the need of installment selling methods in financing home building, including an address by C. A. Gunderson, of the First Bancredit Corporation, of St. Paul, which handles installment paper on homes.

#### Klein Addresses Dealers

Dr. Julius Klein, assistant Secretary of Commerce, also addressed the meeting, presenting a sane picture of the present business conditions and future prospects. H. H. Westerman, Montgomery, Minn., was elected president, for the coming year.

Hopefulness and determination, rather than optimism, marked the convention of the New Jersey Lumbermen's Association, held on January 22, in Newark. The chief exponent of hopefulness was S. D. Baldwin, of Jersey City, who was re-elected president for a third consecutive term.

The retail lumber dealers of North and South Carolina, whose annual meeting was held in Charlotte, on January 22 and 23, particularly emphasized the need of selling houses as complete units rather than as certain quantities of material. R. G. Henry, Hickory, N. C., was elected president.

The Northeastern Retail Lumbermen's Association, meeting in New York City, on January 20-22, adopted the slogan "Stabilize and Mobilize" as a basis for better business during the coming year. Reduction of increasing costs, and the central supply yard were leading subjects of discussion, as well as the need for a higher type of merchandising. B. W. Dowing, of Locust Valley, N. Y., was elected president.

#### Stress Merchandising

The merchandising angle was stressed through the sessions of the Pennsylvania Lumbermen's Association, in Philadelphia, January 21-23. This included a discussion of the unusually successful, co-operative ad-

### Coming Events

**Mar. 4-5, 1931**—South Dakota Retail Lumbermen's Association, Annual, Sioux Falls.

**Mar. 6-7, 1931**—Utah Lumber Dealers' Association, Annual, Chamber of Commerce, Salt Lake City.

**Mar. 16-18, 1931**—Concrete Reinforcing Steel Institute, Annual, Edge-water Gulf Hotel, Biloxi, Miss.

**Mar. 23, 1931**—Louisiana Retail Lumber & Building Material Dealers' Association, Annual, New Orleans.

**Mar. 23-25, 1931**—Southern Pine Association, Annual, Roosevelt Hotel, New Orleans.

**Apr. 11-18, 1931**—Indianapolis Real Estate Board, Home Complete Exposition, Annual, Indianapolis, Ind.

**Apr. 13-18, 1931**—American Oil Burner Association, Annual, Benjamin Franklin Hotel, Philadelphia.

**Apr. 14-16, 1931**—Lumbermen's Association of Texas, Annual, Plaza Hotel, San Antonio.

**Apr. 18-25, 1931**—Fourth Biennial Exposition of Architecture and Allied Arts, Grand Central Palace, New York City.

**May 14-15, 1931**—Florida Lumber & Millwork Association, Annual, Orlando.

**May 26-30, 1931**—National Association of Real Estate Boards, Annual, Lord Baltimore Hotel, Baltimore, Md.

**Aug. 10-15, 1931**—United States Building & Loan League, Annual, Philadelphia, Pa.

vertising campaign which has been carried on by dealers in Shelbyville, Del. Home financing plans also came in for their share of attention. C. C. Rosser, of Nanticoke, Pa., was named president for this year.

Creating new business, financing and the protection of dealer distribution were the leading topics at the annual convention of the Southwestern Lumbermen's Association, held on January 28-30, at Wichita, Kan., at which O. K. Spurrier, Oklahoma City, Okla., was chosen president.

At Detroit, on February 4-6, the Michigan Lumber & Material Dealers Association, discussed a number of important topics especially questions of financing, canvassing, price maintenance, and selling the complete job. N. B. Cove, of Lansing,

was re-elected to another term as president.

Speakers at the annual convention of the Iowa Lumber & Material Dealers Association, held at Des Moines, on February 3-5, stressed the need for creative merchandising and the selling of ideas instead of materials. A. L. Alcorn, of Cedar Rapids, was re-elected president.

How to get business was the predominant theme of the Illinois Lumber and Material Dealers' Association convention, held in Chicago on February 10-12, and creative selling was again stressed. George F. Colton, Rockford, was re-elected president.

#### For Creative Merchandising

Creative merchandising and the sale of the complete home by the dealer was the outstanding topic at the annual convention of the Wisconsin Retail Lumber Dealers' Association, in Milwaukee on February 17-19. The speakers stressed the need for closer contact with the consumer and the use of modern methods in selling to combat outside competition. The president for the coming year will be S. S. Solie, of Janesville.

### To Hold Dealer Session

AN announcement from the Southern Pine Association states that one of the sessions at its annual meeting, to be held at New Orleans, March 23-25, will be devoted entirely to lumber retailers, with some well known retailer acting as chairman and calling upon dealers to present their problems for discussion.

Secretaries of regional and state lumber dealer associations have had requests from the Southern Pine organization for special committees to be appointed for reviewing a plan proposed by the Southern Pine Association for its co-operation with retailers in marketing Southern pine. It is expected that much can be accomplished toward getting this plan speedily under way.

### Canadian Building Declines

ACCORDING to the Annual Review of Building Permits, issued by the Department of Trade and Commerce, of Canada, construction as indicated by the value of building permits issued in 61 Canadian cities during 1930, was not as active as in recent years. The volume was, however, greater than the average for the decade 1920-1929. The permit figure of \$166,379,325 has been exceeded only three times, in 1927, 1928 and 1929. The latter year set a high record of \$234,944,549. The average for the preceding 10-year period was \$156,221,419.



## IT STICKS TO THE BRICK

The unusual plasticity that makes Brixment mortar stick to the brick assures certain structural advantages as well as neat, economical brickwork. It allows a more thorough bedding of the brick because the mortar spreads out more uniformly, giving an increased area of contact between the surface of the brick and the mortar. This results in a better bond and a wall of higher compression strength. Also the brick can be laid more accurately to the line and shoved joints, when specified, can be more easily obtained.

LOUISVILLE CEMENT COMPANY, *Incorporated*, LOUISVILLE, KY.

*Mills: Brixment, N. Y. and Speed, Ind.*

# BRIXMENT

*A Cement for Masonry and Stucco*



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE



## CURRENT CONSTRUCTION FIGURES

THE most encouraging news which has been reported in the building industry for some time appears in the F. W. Dodge reports of construction contracts for the first half of February. The daily average was about \$2,500,000 above that of January. While February usually records a gain over January, the average gain is little more than 16 per cent, but the present gain, if maintained throughout the month, will bring an upturn of fully 27 per cent. This is a decidedly hopeful prospect after the disappointing showing of the January contract figures.

Total construction activity for January as estimated by AMERICAN BUILDER AND BUILDING AGE amounted to \$313,440,050, as compared with \$342,973,812 in December. This was distributed among the various classes of building as follows:

Residential .....	\$122,501,060
Commercial .....	31,278,610
Industrial .....	11,073,590
Educational .....	21,348,690
Hospitals and Institutions .....	5,340,500
Public Buildings .....	5,899,850
Religious and Memorial..	1,853,170
Social and Recreational..	9,412,370
Public Works and Utilities	104,732,210

\$313,440,050

These figures are based on reported contracts, plus estimates by AMERICAN BUILDER AND BUILDING AGE for unreported work, covering the entire United States.

The New York metropolitan area showed an increase of 18 per cent in residential construction. New York

City is generally considered a key to the building trend. Paraphrasing the old political saying, students of building statistics claim that, "As New York goes, so goes the nation," and any increase in building in the New York area is considered an indication of improvement throughout the country. It is also the consensus now that residential construction will take the lead in the 1931 building revival.

With these assumptions in mind, an 18 per cent increase in residential construction in the New York area during January would seem to indicate a turn in the tide, with the prospect that the spring will show a definite improvement in building volume, at least so far as residential construction is concerned.

Added to the evidence of these monthly contract figures, comes a report from Chicago that building permits in that area, during the first six weeks of 1931, show a substantial increase over the same period in 1930. Permits for the first two weeks of February amounted to \$4,478,000, as compared with \$640,000 for the similar period in 1930.

While it is still too early, and the period is too limited, to take these figures as a positive assurance of what the present year will develop, they are the first indication that building in the two largest important metropolitan areas is on the road to normal. They do offer a degree of encouragement to overcome the pessimism that has been an undoubted stumbling block in the path of more rapid progress.

will be displayed at the exposition.

This contest is a regular feature of the Exposition which was inaugurated to create an educational interest not only for the present but also for the future prospective home owners. It is expected that about 400 to 500 models will be on display grouped in the form of a miniature town. Excellent work has been done in the past by the students entering the contest.

### Bethlehem Steel Buys McClintic-Marshall

THE Bethlehem Steel Corporation has purchased the McClintic-Marshall Corporation for a consideration of approximately \$20,000,000. This will increase the Bethlehem capacity for the production of structural steel beams for bridges and buildings, which has in the past been relatively small, by 70,000 tons a year.

The McClintic-Marshall properties will be operated as a subsidiary of the Bethlehem company under a similar name. G. H. Blakeley, vice-president of the Bethlehem Steel Corporation, has been made president of the McClintic-Marshall organization and C. D. Marshall, one of the founders of McClintic-Marshall, is expected to be added to the Bethlehem board.

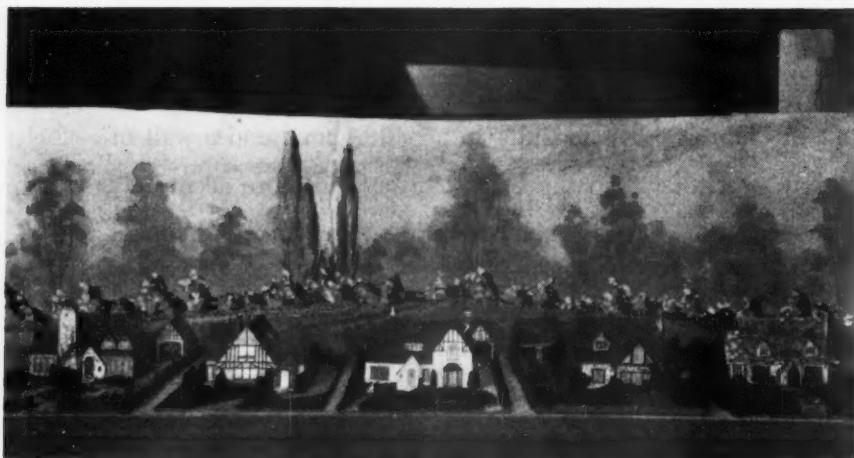


G. H. Blakeley

### Exhibit Miniature Models

AN interesting feature of Annual Home Complete Exposition, of the Indianapolis, Ind., Real Estate

Board, which will be held April 11 to 18, 1931, will be a contest among high school and college students in building miniature, model homes. Prizes will be awarded and the models



Some of the Miniature Model Houses Exhibited at the Indianapolis Home Complete Exposition Last Year.

### A.G.C. Hold Annual Convention

REPORTS of the annual convention of the Associated General Contractors of America, held at San Francisco, on January 26-30, state that groundwork for the control of the construction volume of the nation, so that it may be relied upon as a reservoir of purchasing power to tide over low points in consumer demand, has been laid by organized general contractors and promises to equal if not exceed the Federal Reserve Banking System in its stabilizing effect.

### Takes Over Stewart Line

THE Zeidler Concrete Products Machinery Company, of Waterloo, Iowa, has taken over the line of concrete mixers formerly made by the Stewart Mfg. Co., of Waterloo, and is furnishing repair parts for Stewart machines now in use.

# WHEN THE SALE HANGS IN THE BALANCE



You will find ready and easier sales for the homes to which you add the colorful charm of GLASIRON ROOFING.

The owner-satisfaction of a GLASIRON roofed home increases with the years. The beauty of GLASIRON is permanently indestructible—its rich effect is never dulled by the ravages of time or weather—the rain and snow keep it everlastingly clean. *There is never any maintenance on a GLASIRON roof.* It is forever a joy to the proud owner.

Available in two sizes of the popular shingle design shown in this actual photograph as well as the new Spanish type, with antique, glazed or sanded finishes in every conceivable color, and with duotone effects if desired, GLASIRON has already aided the sale of many homes for builders.

Your request will bring full details and illustrations by return mail.

## GLASIRON

Division of  
The WOLVERINE PORCELAIN  
ENAMELING Company

3326 Scotten

Detroit, Mich.

GLASIRON WALL TILE is another product which is practical, beautiful and easily applied. Although very economical to use, it is the most attractive and lasting wall surface available today. It is easily cleaned and absolutely permanent. Comes in all colors and distinctive pattern effects.

### GLASIRON DIVISION

Wolverine Porcelain Enameling Co.  
3326 Scotten, Detroit, Mich.

Please send literature on GLASIRON  
Roofing and Wall Tile.

Name \_\_\_\_\_

Address \_\_\_\_\_

☐ Architect ☐ Builder ☐ Owner ☐ Dealer

Valuable Territories Open to Progressive Dealers

GLASIRON BEAUTY IS AGELESS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

## Construction Census Reports 149,798 Contractors

RECORDS of the Census Bureau show that the Construction Section of the Census of Distribution has received 149,798 reports from contractors in the United States. Of this number 34,794, or 23.2 per cent reported construction work during 1929 amounting to \$25,000 and more. The construction figures also show there were 122 contractors reporting per 100,000 population of whom 28 reported construction of \$25,000 and more in value.

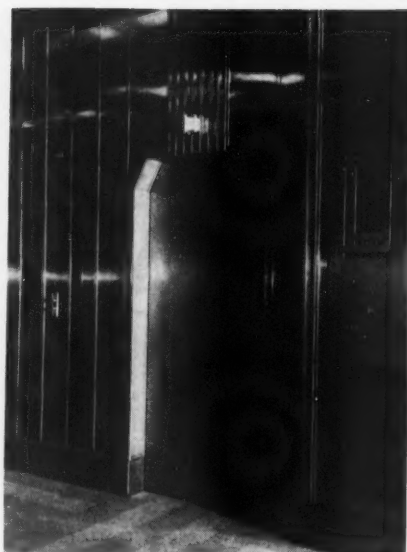
All the foregoing figures are based on contractors' reports received up to and including January 15th. Additional reports have been received since that date, since the construction canvass largely conducted by mail has not been completed.

In proportion to its population Connecticut leads all other states with 302.7 contractors reporting per 100,000 population, and California ranks second, with 261 per 100,000 population. New Jersey has 215 contractors reporting per 100,000 population, while the District of Columbia had 171.7 and New York 169 per 100,000 population.

TABLE I.—DISTRIBUTION BY STATES

State	Total No. of Reports Received	Number Reporting Business Amounting to \$25,000 & Over		
		Number	% of Total	% of \$25,000 and Over
United States	149,798	34,794	23.2	115,004
Alabama .....	628	192	30.6	436
Arizona .....	358	105	29.4	253
Arkansas .....	648	125	19.3	523
California .....	14,811	2,763	18.7	12,048
Colorado .....	1,490	197	13.2	1,293
Connecticut .....	4,862	860	17.7	4,002
Delaware .....	275	88	32.0	187
District of Columbia .....	836	310	37.1	526
Florida .....	1,473	253	17.2	1,220
Georgia .....	683	206	30.2	477
Idaho .....	325	36	11.1	289
Illinois .....	9,672	2,904	30.0	6,768
Indiana .....	3,757	776	20.6	2,981
Iowa .....	3,198	485	15.2	2,713
Kansas .....	1,616	325	20.1	1,291
Kentucky .....	1,659	356	21.4	1,303
Louisiana .....	830	218	26.3	612
Maine .....	893	147	16.5	746
Maryland .....	2,279	441	19.4	1,838
Massachusetts .....	7,129	1,654	23.2	5,475
Michigan .....	7,274	1,599	22.0	5,675
Minnesota .....	2,922	685	23.4	2,237
Mississippi .....	461	104	22.6	357
Missouri .....	3,076	854	27.8	2,222
Montana .....	523	140	26.8	383
Nebraska .....	1,367	267	19.5	1,100
Nevada .....	155	23	14.9	132
New Hampshire .....	758	128	16.9	630
New Jersey .....	8,697	1,718	19.8	6,979
New Mexico .....	230	46	20.0	184
New York .....	21,277	6,160	29.0	15,067
North Carolina .....	670	300	44.8	370
North Dakota .....	537	111	20.7	426
Ohio .....	9,304	2,331	25.0	6,973
Oklahoma .....	1,189	324	27.2	865
Oregon .....	1,330	273	20.5	1,057
Pennsylvania .....	14,292	2,986	20.9	11,306
Rhode Island .....	1,226	239	19.4	987
South Carolina .....	413	123	29.8	290
South Dakota .....	449	82	18.3	367
Tennessee .....	1,353	404	30.0	949
Texas .....	3,984	1,098	27.8	2,886
Utah .....	867	146	16.8	721
Vermont .....	340	64	18.8	276
Virginia .....	1,204	329	27.4	875
Washington .....	1,916	426	22.2	1,490
West Virginia .....	982	198	20.2	784
Wisconsin .....	5,413	1,155	21.4	4,258
Wyoming .....	217	40	18.4	177

Above figures include all replies received up to and including January 15, 1931.



An Elevator Alcove in the La Salle-Wacker Bldg., Finished in White Metal and Dark Steel Blue Glass

## Use Modern Decoration

AN interesting example of modern decoration for buildings, using some of the more recently developed materials, is to be found in the lobby of the new La Salle-Wacker Building, in Chicago, which was designed by Holabird & Root and Rebori & Wentworth, Architects.

The walls of the lobby are built up of alternate panels of polished Allegheny metal and dark, steel blue glass which contrasts in a most striking manner with the white metal. The base, cornice and ceiling in the elevator alcoves are of the same metal. The alternating metal and glass panels are 16 inches wide and 14 feet high. Doors, display windows and frames of doors leading to the stores are also

of Allegheny metal. Fluted panels of Monel metal, in low relief, appear above the doors and at the sides of the elevator alcoves. The elevator doors are single polished sheets of white metal.

Indirect lighting for the main lobby is furnished by a polished metal trough extending around the ceiling. The cost of the metal and glass walls is described as slightly less than that of marble and the architects were influenced in their choice of the newer materials by the possibility of keeping a highly polished finish at a low maintenance cost.

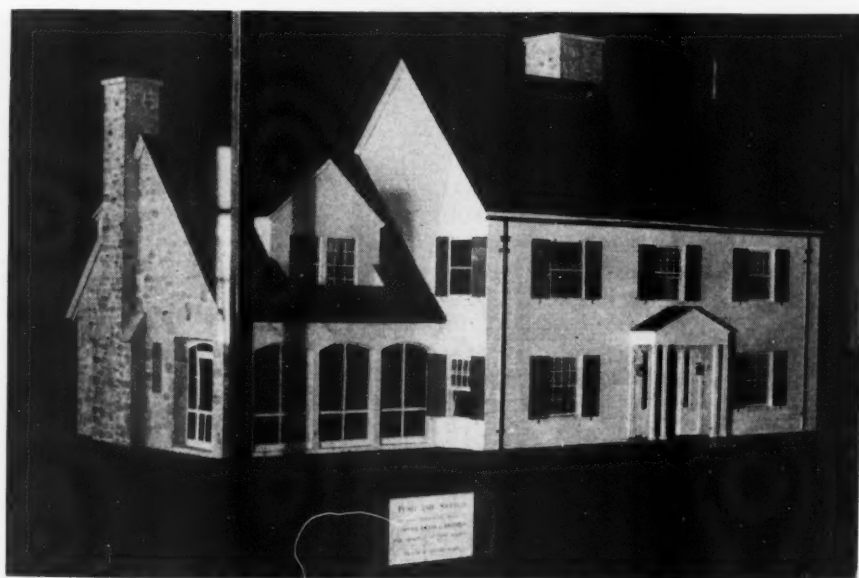
## Laboratory Established

THE Kerner Incinerator Co. of Milwaukee, Wis., has recently established a research laboratory under the supervision of H. Erskine Nicol, an engineer of wide experience in this field. The purpose of the new laboratory is to maintain the continuous development of the science of incineration. Architects, builders and engineers are invited to submit their problems to the laboratory.

## Exhibit Model House

A miniature, model house, complete in every detail, has been constructed by the Copper & Brass Research Association, for the Bureau of Standards, and is on exhibit in Washington, D. C. It was prepared for the purpose of demonstrating modern architecture and is a faithful reproduction of an actual house.

The model is of frame construction with a stone chimney. A copper roof and spouting were used and also brass pipe plumbing and bronze screens.

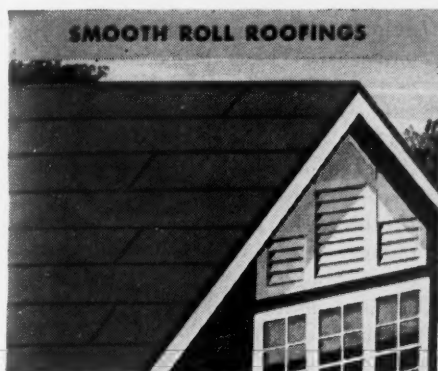


This Miniature Model House Is Complete in Every Detail, Even to Electric Lights



# RU-BER-OLD ROOFS...

## *attractive, long-lived BUT Low-Priced*

**SMOOTH ROLL ROOFINGS**

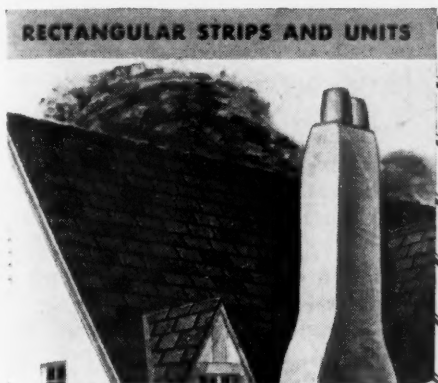
For sheds, farm and industrial buildings. 4 grades, 3 weights each, ranging from roofing for temporary work to Genuine RU-BER-OLD which has given service 20, 25 and 30 years.

**MINERAL SURFACED ROLL ROOFINGS**

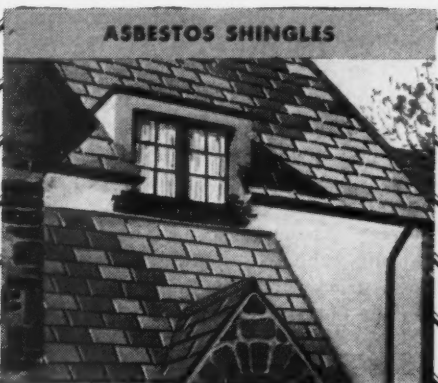
For porch roofs, sheds, farm and industrial buildings. 3 grades, 3 weights, 4 colors. All the advantages of Smooth Roll Roofing with the added feature of a decorative, fire-resistant, mineral surface.

**HEX STRIP SHINGLES**

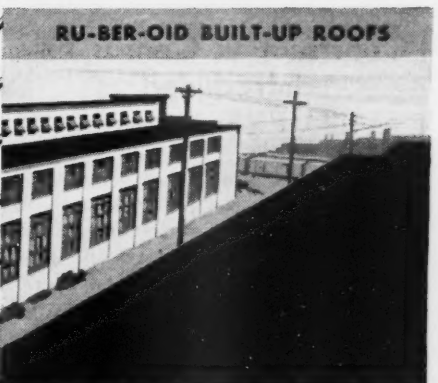
For moderate priced cottages, bungalows, residences, garages, farm and industrial buildings. 4 weights, 4 prices, 8 beautiful colors, 2 mix-tones. Butts cast heavy shadow lines. Fire-resistant.

**RECTANGULAR STRIPS AND UNITS**

For higher priced residential, farm and industrial buildings. 6 weights, 6 prices, 8 artistic colors, 2 color blends. A wide choice providing multiple thicknesses of roof protection. Fire-resistant.

**ASBESTOS SHINGLES**

For high grade residences, churches, schools, etc. Wide range of prices. 6 colors of permanent beauty, 4 color blends, 3 methods of application: Hexagonal, Horizontal and American. Fireproof.

**RU-BER-OLD BUILT-UP ROOFS**

For all flat roof construction. 3 types: Asbestos, Asphalt, Coal Tar Pitch and Felt. Flexible specifications, priced according to number of layers of protection. Bonded guarantees if desired.

RU-BER-OLD Roofs are recognized the world over as the most inexpensive type of roofing having beauty, long life and fire-resisting qualities. They are obtainable in a wide variety of types, styles, weights and colors to fit every building and every pocketbook. . . . For re-roofing, RU-BER-OLD Shingles offer a further economy. They may be applied over the old wood shingles. This saves labor, provides double insulation and a corresponding saving in fuel costs. . . . Hundreds of thousands of buildings of all types have been roofed with RU-BER-OLD Shingles and Roofings during the past 40 years. Many of these roofs have been in service 20 to 30 years and are still in good condition. . . . RU-BER-OLD dealers are carefully chosen. Many have continually handled RU-BER-OLD for over 25 years. A recent poll of RU-BER-OLD dealers shows that 49 per cent are officers or directors of banks or trust companies, 45 per cent are officers of building loan associations, and 83 per cent are active in their local civic organizations.

### The RUBEROLD Co.

ROOFING MANUFACTURERS FOR OVER FORTY YEARS

Sales Divisions: RUBEROLD MILLS—CONTINENTAL ROOFING MILLS  
SAFEPAK MILLS—H. F. WATSON MILLS—ETERNIT

ASPHALT SHINGLES AND ROLL ROOFINGS—ASBESTOS-CEMENT SHINGLES AND CORRUGATED SHEETS—ASBESTOS, ASPHALT, COAL TAR PITCH AND FELT BUILT-UP ROOFS—ASBESTOS: SHEATHINGS, FELTS, MILL BOARD, PIPE COVERINGS—KRAFT WATERPROOF PAPERS—COAL TAR AND ASPHALT FELTS AND SHEATHINGS—ASPHALT WATERPROOFING PAINTS AND CEMENTS—DRY FELTS AND SHEATHINGS

Offices & Factories: New York, N. Y.—Chicago, Ill.—Millis, Mass.—Eric, Pa.—Baltimore, Md.—Mobile, Ala.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

## IT IS REPORTED THAT—

In Ohio, one person out of every three—including men, women and children—is a member of a building and loan association.

The Laboratories of the Bureau of Standards, in Washington, D. C., completed 200,726 tests during the fiscal year ended June 30, 1930.

The 48 States and Hawaii, with the aid of federal funds, completed improvements on 9,349 miles of federal-aid highways during 1930, bringing the federal-aid system, at the close of the year, to a total of 193,049 miles.

The National Association of Building Owners and Managers has secured data showing that the average life of office buildings in large cities is not over 25 years.

All-metal, factory-made houses have found favor in Germany and a patent has been granted to the manufacturers by the United States government.

Building construction took first place in 1930 as a consumer of steel, passing ahead of the automobile industry which was first in 1929.

Despite the economic depression, more than 2,000 new businesses were opened in Chicago during the first six months of 1930, an increase of almost 10 per cent over the number started during the same period of 1929.

Federal funds amounting to \$235,383,877 are available for road projects, \$80,000,000 of this being an emergency appropriation to increase employment.

### Construction Census Bill Introduced

ESTABLISHMENT, on a permanent basis, of the construction service in the United States Census Bureau is provided for in a bill proposed in the Senate by Senator Hiram Johnson of California. The proposed bill says:

"Be it enacted . . . that the Secretary of Commerce, shall through the Bureau of Census, continue the collection, compilation, tabulation, interpretation, publication and dissemination of statistical data, and other information pertaining to the construction industry, including an annual census."

If this measure is passed, it will establish as a permanent, annual activity of the Census Bureau the construction census which was, for the first time, undertaken during the past year.

### Launch Floor Organization

A NEW organization, with trade promotion as its immediate objective, was recently formed when more than half the total oak flooring producers of the United States organized the Southern Oak Flooring Industries, with headquarters since established in Little Rock, Ark. Besides trade promotion, activities research, trademarking, standardization of sizes and grades, statistics and supervision of traffic matters will be undertaken.

The trade promotion and advertising program will be directed by Robert H. Brooks Co., of Little Rock, which has specialized in advertising campaigns for lumber interests. Ralph E. Hill, formerly manager of the Long-Bell Sales Corporation, has been made secretary-manager of the new organi-

zation. Mr. Hill says:

"Our activities, in a measure, will parallel the Oak Flooring Manufacturers' Association. It should be noted, however, that members of the Southern Oak Flooring Industries are also members of the Oak Flooring Manufacturers' Association. It is not thought at this time that the setting up of the new group will make any other change in the old association than the restricting of its activities along the line of publicity and trade promotion."

### Builders Exchanges Meet

THE National Association of Builders Exchanges held its annual convention at San Antonio, Tex., on February 17. The leading speakers were Alanson D. Morehouse, chief construction section, U. S. Bureau of the Census, and Edwin W. Ely, chief of the division of simplified practice of National Bureau of Standards. The latter talked on the reduction of costs in the manufacture, distribution and dealer handling through simplified practice. It was suggested that Mr. Ely appoint a simplified practice committee to maintain contact with the bureau, according to an announcement made by Earl F. Stokes, of Washington, D. C., secretary of the association.

### Charles F. Abbott Honored

CHARLES F. ABBOTT, Executive Director of the American Institute of Steel Construction, has been elected vice-president of the National Council of Traveling Salesmen's Associations, in recognition of his efforts to organize and improve the sales training among the representatives of the steel construction industry.

### Acquire Woodworking Line

THE American Floor Surfacing Machine Co., of Toledo, Ohio, has acquired an exclusive license for the manufacture and sale of the Electric Carpenter Machine and the Greyhound Slide Saw, and all other machines that have been manufactured and sold by the Woodworking Machinery Company, Inc., Norristown, Pa.

These machines were designed and developed by Gilbert L. Dannehower, president of the Woodworking Machinery Co., who is well known throughout the woodworking machinery industry and is a graduate mechanical engineer of LaFayette College, Easton, Pa. In 1919 Mr. Dannehower organized the Hutchinson Manufacturing Company, at Norristown. In 1927 he sold his interests in that company and organized the Woodworking Machinery Co. In 1928 he placed on the market the Electric Carpenter machine and the Greyhound Slide saw.

Mr. Dannehower and the personnel of the Woodworking Machinery Company will be actively identified with the American Floor Surfacing Machine Co. in promoting the manufacture and sale of its complete line of machines.

The American Floor Surfacing Machine Co. is a well established, national organization with twenty sales offices located in important cities throughout the country. It now manufactures a complete line of floor surfacing machines.

### Require \$5,000 License Fee

ON November 5, 1930, the Chicago City Council passed, by unanimous vote, an ordinance amending the code applying to contractors doing sidewalk work which reads as follows:

"Said applicant shall also deposit with the City Comptroller the sum of five thousand dollars cash, said sum to be retained by said Comptroller for a period of four years after such applicant shall cease doing business, as a deposit on account to be used in rebuilding or replacing of defective walks, laid by such applicant, in event of failure to rebuild or replace such walks after written notice as hereinafter provided for."

This ordinance, which is now effective, requires, in effect, a \$5,000 license fee from contractors doing sidewalk work. The Monthly Bulletin of the Building Construction Employers' Association is asking of Chicago contractors, what they are going to do about it.



# HERE'S YOUR CHANCE

## To make some real money



### The American Method of Floor Finishing

If you are a building contractor waiting for something to turn up—if you are a carpenter worrying about your job, a keeper, laborer, or what-not, without a definite knowledge of just what's ahead of you—here is an opportunity for you to eliminate the uncertainty and get into a tried and proven successful business.

The "American Floor Finishing Method" gives you the big chance you have for years been waiting for. Here is something that puts you into something for yourself—to make big profits—to be your own boss—to quit worrying about your job—and enables you to get somewhere in the world.

### Opens Up a Tremendous Field

In addition to smoothing up and sanding newly laid floors and the resurfacing of old floors—the new American Method enables you to wax, polish and finish complete any old or newly laid floor. Just think of the hundreds of old worn floors in your town that need resurfacing. Most every floor will stand a waxing and polishing job be-

cause everyone hates to polish floors by a weighted brush. Consequently they let them go until about the only way to ever get them in shape is through mechanical means—the American electrical floor finishing method.

### Plenty of Work

All floors in new homes and all kinds of buildings have to be surfaced—An electrically driven American sanding machine does this. After the floors are surfaced an American electrical floor maintenance machine waxes and polishes them, giving you two profits on every job. Then with the old floors needing resurfacing and refinishing and all of the waxing and polishing jobs you get you can see that there is no end to the work.

### Work Easy to Get

A complete set of business getting advertising material consisting of beautifully colored mailing cards and folders to hand out to prospective customers, business cards, etc., all printed with your name and address makes it easy for you to get plenty of work—This is a tried and proven plan that's bound to get the work.

### Keeps the Money Rolling in the Year 'Round

Floor finishing is nice, easy and pleasant inside work out of the weather and cold. The "American Method" profits are big. There are scores of jobs right now all around you. Office buildings, stores, schools, colleges, clubs, hospitals, churches, apartments, dance halls, roller rinks, bowling alleys, auditoriums, banks, hotels, and hundreds of residences all have floors that are being worn day in and day out by being constantly walked upon, which gives you more work than you could do once you get into the American Method business.

### Right Now Is the Time to Start

Spring house cleaning time will soon be here—That opens up a tremendous amount of resurfacing as well as waxing and polishing. By starting right now it will give you enough time to pass out your advertising matter and get established by the time the big rush opens up.

### No Experience Required

American machines are so simple in their construction, so easy to operate, and our instructions so thorough that the most inexperienced can get onto the hang of it within 30 minutes after he gets his hands on the machine—And within a day or so he is going right along like an old timer. Simply connect the cord to the electrical connection, turn on the switch, guide the machine like you would a vacuum cleaner, and that's all there is to it. Let us show you pictures of boys from 14 years of age to men 74 years old running these machines.

### We Will Back You

If you're honest and not afraid to put on a pair of overalls, you won't need much money to get started. We will back you, work with you, and give you plenty of time to pay for the equipment. We've helped hundreds get started, seen them succeed, and there's no reason why anyone not afraid of work can't make the American Method of floor finishing a big success in their community.

### Made in Two Sizes

You can start with the small machine—the American Handy Sander shown at lower right hand side of page—or the American High Production machine shown in picture at top of page. Both are money makers. The American machine that does the waxing and polishing is shown on lower left hand corner of page.

### Hundreds Are Doing It—So Can You—

Cunningham of Detroit has a whole fleet of these machines—Jimison of West Virginia—Parsons of Kansas—and hundreds of others are making a big thing out of the American floor finishing method. Let us tell you how they are doing it and you'll see then that there is no reason on earth why you can't do the same.

### Get Full Particulars Now

Don't kid yourself along on that day job uncertainty or skinny building contracting work any longer, but take the interest at least to investigate the new "American Method" of floor finishing.

Mail in the coupon and get the facts.

## 30 DAY OFFER

Business Cards, Business Getting Folders, Post Cards, Estimate Blanks—All printed with your own name. **FREE**

### The American Floor Surfacing Machine Company—

511 South St. Clair Street, Toledo, Ohio

COUPON



American  
Waxing  
and  
Polishing  
Machine

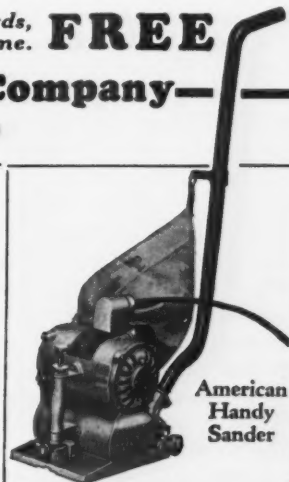
American Floor Surfacing Machine Co.  
511 S. St. Clair St., Toledo, Ohio.

Gentlemen:—Send me without obligation your complete plan for starting in business with your machines.

(Name) .....

(Street) .....

(City)..... (State).....



American  
Handy  
Sander



# The Builder's Library

## Miscellaneous Publications

### "How to Judge a House"

This is the latest booklet of the National Committee on Wood Utilization. It was prepared for the purpose of stimulating home building, and to present reliable information of such a character that the purchaser of a home might select it with a full understanding of the important points in design, plan, construction, and mechanical installations. Sold by the Superintendent of Documents, Washington, D. C. Price 10 cents each, \$7.00 a hundred, and \$50.00 a thousand copies.

### "Better Gardening"

This booklet on "what, when and how to plant," has been published by the Union Fork and Hoe Co., Columbus, Ohio. It is full of information useful to the home owner.

### "Engineering Achievements—1930"

A new booklet issued by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., under this title, outlines the company's developments during the past year.

## Construction Materials

### Spring Hinges

Two new catalogs are offered by the Shelby Spring Hinge Co., Shelby, Ohio. Catalog No. 30 covers Shelby double and single acting checking floor hinges; catalog No. 31 is a complete catalog covering all the company's products, including hinges, screen window hangers, window hardware, and builders' hardware specialties.

### Portland Cement

Information on "Incor—A High-Early-Strength Portland Cement" has been issued by the International Cement Corp., 342 Madison Ave., New York City, in the form of two illustrated folders.

### Metal Lath

Two new folders are offered by the Micor Steel Co., Milwaukee, Wis. One announces a new metal lath called Kuehn's Specialmesh, while the other contains further information on this product.

### Wrought Iron

Under the title "An Important Contribution to Metallurgy," the A. M. Byers Company, Clark Bldg., Pittsburgh, Pa., has published an interesting booklet describing its new method of manufacturing wrought iron, on a large scale, under the Aston patents.

### Aluminum Truck Bodies

"Alcoa Aluminum for Truck Bodies" is the title of a very complete and handsome booklet published by the

**Check These Items Every Month and Write for Those You Need to Keep Your Files Up to Date. Any Item Listed Will Be Sent Free on Request Except Where a Price Is Noted. The American Builder & Building Age Should Be Mentioned When Writing for These Publications.**

Aluminum Company of America, 2420 Oliver Bldg., Pittsburgh, Pa., presenting the advantages of aluminum truck bodies.

### Fireproof Insulation

A recent circular prepared by the Thermax Corporation, 1411 Fourth Ave., Seattle, Wash., presents the four characteristics of this new material, insulation, fireproofing, structural strength, and sound insulation.

### The Nailock System

A new booklet issued by the Wheeling Corrugating Company, Wheeling, W. Va., presents the complete story of this system of construction for non-bearing partitions, suspended and attached ceilings.

### Pipe Caulking Compound

"Hydro-Tite for Jointing Bell and Spigot Water Pipe Mains" is a new booklet which has been published by Hydraulic Development Corporation, 50 Church St., New York City, giving complete information about, and specifications for using, its self-caulking joint compound.

### "Westfelt Handbook of Acoustics"

This is the title of a handbook which has been prepared by the Acoustical Division of the Western Felt Works, 4029-4133 Ogden Ave., Chicago, and published in booklet form. It contains much valuable technical information on the acoustical treatment of buildings.

## Equipment for Buildings

### Lighting Plants

The Westinghouse Electric & Manufacturing Company's complete line of electric service plants is described and illustrated in a new folder, MK-1284, published by this company's Technical Press Service, East Pittsburgh, Pa.

### Drinking Fountains

New sanitary drinking fountains, made by the Crane Company, 836 S. Michigan Ave., Chicago, are announced in this company's circular No. 619-C, which contains illustrations and complete information.

### Door Hardware

Two new 1930 catalogs have been issued by the Allith-Prouty Company, Danville, Ill. Catalog No. 99 is devoted to Allith Airport Door Hard-

ware, and Catalog No. 88 covers fire door hardware.

### Heat Regulator

"A Seven League Step in the Science of Heating" is the title of a new booklet offered by the Hoffman Specialty Co., Inc., 25 W. 45th St., New York City, covering the new Hoffman Thermador for heating control.

### Steel Lockers

"Solving Gymnasium Storage Problems" is a new booklet published by the Durabilt Steel Locker Co., Aurora, Ill., which contains much useful information on this subject.

### Garage Doors

A new upward acting garage door has just been placed on the market by the American Sash & Door Co., Kansas City, Mo., and is fully described and illustrated in a circular which this company is offering.

### "Lighting for Seeing"

This is the title of a new booklet offered by the General Electric Company, Nela Park Engineering Department, Cleveland, Ohio. It contains much valuable information on the science of lighting, developed by the company's lighting research laboratory.

### Refrigerators

Refrigerators for hotels, restaurants, hospitals, clubs and other similar establishments are fully covered in a new catalog No. L30, published by The Lorillard Refrigerator Company, Kingston, N. Y.

## Offered by Book Publishers

### "Designing Heating and Ventilating Systems"

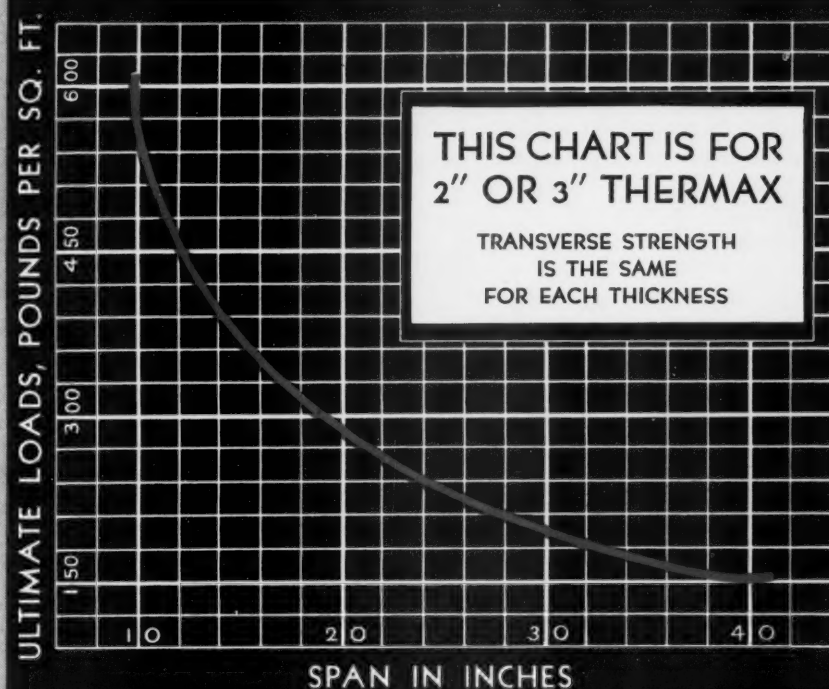
This book, by Charles A. Fuller, consulting engineer, is described as "a practical treatise on the design of heating and ventilating equipment for buildings of all kinds based upon the engineering rules and formulae in everyday use. Adapted for use as a text in colleges and schools and as a reference book for engineers and architects." The third, revised and enlarged edition has just been published by the Scientific Book Corporation, 15 E. 26th St., New York City. Price \$3.00.

### "Estimating Building Costs"

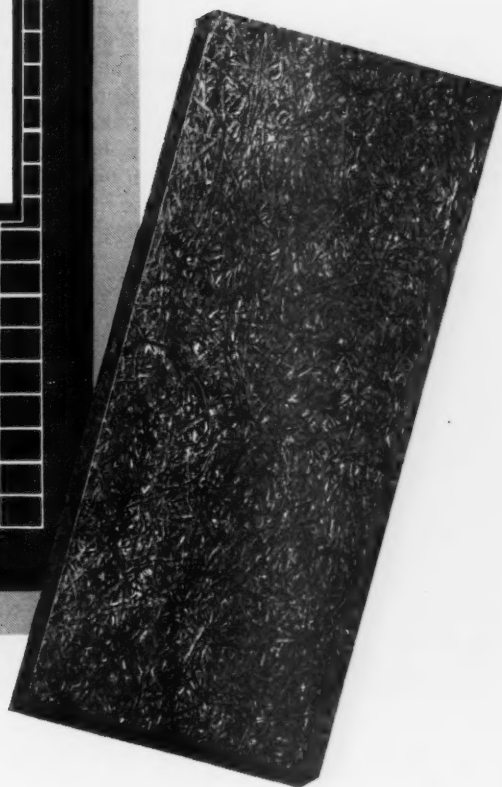
Because of changes in the handling of building construction since the first edition of this book, by Charles F. Dingman, architectural engineer, was published, a revised second edition has now been brought out by the McGraw-Hill Book Company, Inc., 370 Seventh Ave., New York City. This is a valuable handbook on estimating, of convenient size for practical use. Price \$2.50.

# THERMAX

*the* FIREPROOFING INSULATION..



*Result of tests conducted  
by Prof. F. A. Osborn,  
University of Washington*



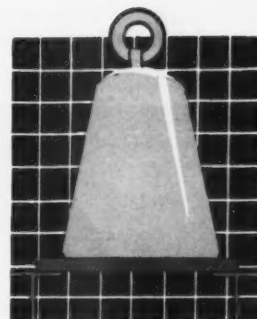
## *Greater Structural* **STRENGTH**

No other insulation board has the structural strength of Thermax. Load carrying capacities for roof and floor construction show 180 to 200 pounds per square foot for 2 inch and 3 inch Thermax laid on supports 32 inch on centers. A glance at the chart above illustrates how Thermax may be used over wide spans thus eliminating heavy, expensive construction and maintaining a generous factor of safety.

Thermax has over 15 times the insulating value of concrete per inch of thickness. It provides more insulation per dollar of cost than any other board or precast slab and solves the prob-

lem of roof condensation. Thermax is a scientific combination of rock and wood resulting in the only fire-proofing board that has real insulation value and high sound-proofing qualities.

It is available in three thicknesses. Standard dimensions for 1 and 2 inch Thermax are 20 inches wide by 64 inches long. 3 inch Thermax comes 20 inches wide by 48 inches long . . . Special lengths will be furnished when specified in quantity. Write for copies of Thermax tests and descriptive literature which explain the many uses for this modern insulating lumber . . . Address . . .



**THERMAX CORPORATION**  
1411 FOURTH AVENUE ★ SEATTLE, WASHINGTON

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

# These Are New

## Effective Sound Insulation

THE illustration shows an installation of sound control insulation which solved a serious problem at the Ozaukee Country Club, near Milwaukee, Wis. The men's grill at the club was extremely noisy. Conversation, naturally enthusiastic after playing golf, echoed and re-echoed from the vaulted ceiling and created a disturbing din:

It was finally suggested that a well known type of fiber board insulation be applied to the ceiling and when the suggestion was put into effect the problem was solved. The president of the club now states, "Our men's grill is at last mentally comfortable and quiet. The reverberations have disappeared and conversation may be carried on without undue strain. Not only were the objectionable conditions entirely removed, but the appearance of the room was greatly improved."

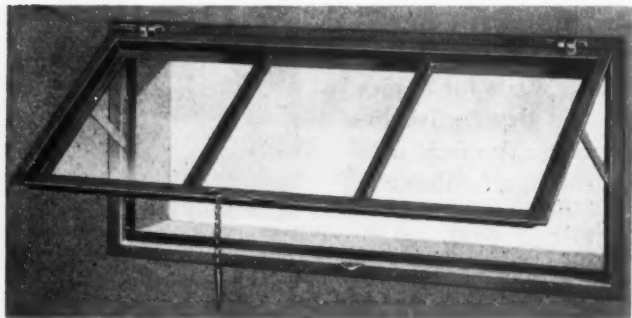


Fiber Insulating Board Applied to the Ceiling Solved the Noise Problem in This Grill Room.

The insulating board was installed exposed, and panelled. In this form it was most effective and the natural texture of the material with the panelling was highly attractive as decoration. The use of insulating board suggests an enlarged field for jobs for the contractor. Many stores and offices where noise is a disturbing factor could be sold on similar sound control.

## Cast Iron Basement Window

A CAST iron basement window, the window and frame each being cast as a one piece unit, even to the hinges, and thus eliminating all possibility of loose joints developing, has recently been placed on the market. In designing this



Window and Frame Are Each Cast as a One Piece Unit Even to the Hinges.

**For Further Information in Regard to Any Product Described in This Department, Write to the American Builder and Building Age, Information Exchange, 105 W. Adams St., Chicago.**

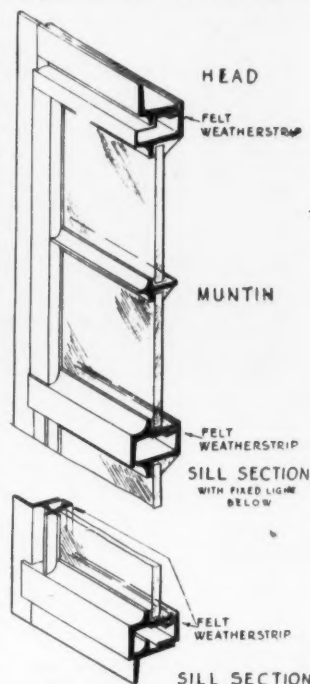
window a drip was constructed on all four sides of the sash and frame which gives it a two point contact and makes it suitable for use in any position.

The hinges operate freely when located at the top, bottom or side, eliminating the necessity of designing a different construction for each location and type of operation. Cast iron for windows subjected to strain and rough usage is a practical indestructible material, according to the manufacturers. It will not rust and has the added advantage that it will not warp or shrink and lose its alignment.

## Improved Industrial Sash

AN improved type of industrial window sash, with a felt weatherstrip on all four sides of the ventilator, has recently been placed on the market. According to the manufacturer, a well known company in this field, this weatherstripping makes the new sash absolutely weather-tight, eliminating the leakage of wind, rain and snow which increases the cost of heating where industrial sash are used.

The felt weatherstripping is built into the new sash at the factory, as this is the only way in which it can be properly adjusted, and permanently held in place, it is stated. The illustration shows the details of how the felt is applied. It is held in a metal container that is spot welded to the sash or frame, as the case may be, with the felt forming the inside weathering contact. The felt is placed on the inside to allow any condensation that may form to pass through the outside contact of metal to metal.

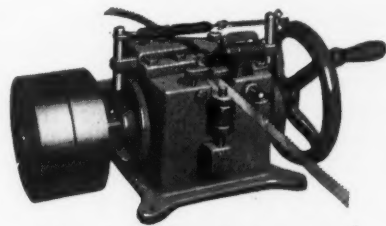


Details Showing How Felt Weatherstrip Is Applied to Industrial Sash.

## Automatic Band Saw Set

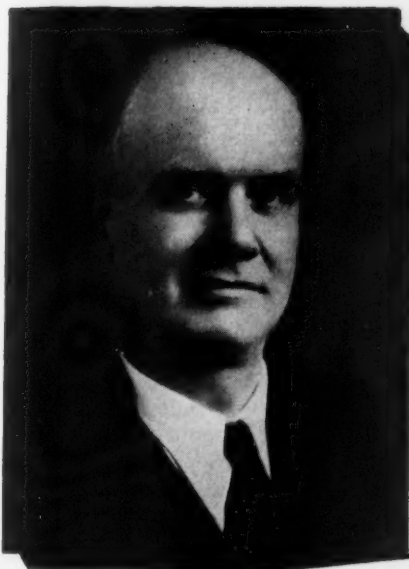
A NEW automatic hammer, band saw set, which the manufacturers claim is the only machine of its kind, has recently been placed on the market. This machine sets both sides of the saw at the same time, with a hammer stroke on an anvil, making all teeth perfectly even. The hammer stroke is adjustable so that any amount of set may be secured.

This machine is much faster than previous hammer sets, it is stated, setting 150 teeth per minute.



Here Is a Greatly Improved Band Saw Set.





# PROMINENT MEN in CANADA Organize Chain of DUNBRIK Plants First Plant Installed near TORONTO

**CEMENT BRICK & TILE CO., LTD.**

**DUNBRIK**  
A Lighter, Stronger, and  
Better Building Unit

**DUNTEX**  
The Most Successful Road  
Material in the  
World

TORONTO, JANUARY 26, 1931.  
PLANT 1, DUNBRIK

W. E. Dunn Mfg. Co.,  
Holland, Mich.

Dear Mr. Dunn:

I am sending you a photograph of our factory building completed in 27 days in spite of severe winter weather. We have already produced sufficient DUNBRIK to satisfy us that later our cost will not exceed \$6.50 per thousand.

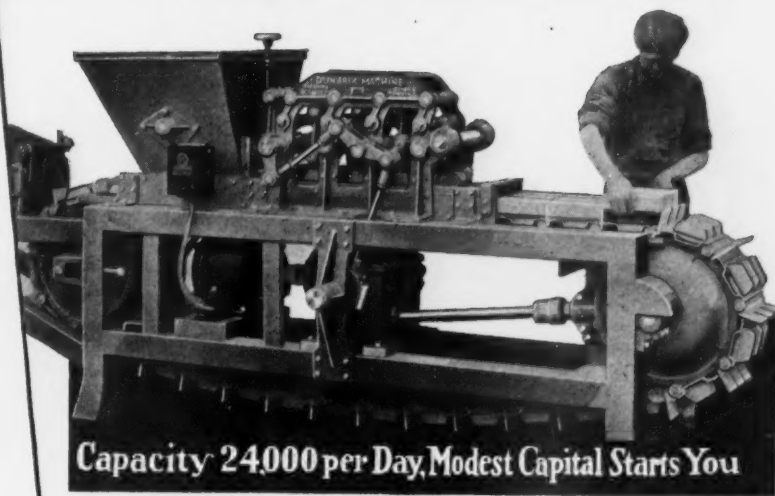
A careful survey of the TORONTO market assures me that we can deliver DUNBRIK to any job at a price considerably less than the cheapest competition, and furnish a product with an 80-thousand-pound test as compared to a 50-thousand one of inferior brick. Considering this, and the way things look, I figure our first year's profits should exceed \$50,000.

Have decided to go ahead with Plant No. 2 in an enterprising city of 15,000 population. We can conveniently serve three other cities from this pivotal plant. The Chamber of Commerce there offered a free site and building to locate in their city. Many buildings are being contemplated there, and I have been promised some nice orders by some big contractors.

As soon as this plant is completed, we will proceed in establishing Plant No. 3 in a city that is growing rapidly, with immense future possibilities. In an interview with some of the business interests, they offered some extraordinary inducements to establish the third DUNBRIK plant there.

The more I study this business, the bigger I see the future for DUNBRIK in Canada, which, you'll remember, was started by seeing your ad in the AMERICAN BUILDER, and my subsequent visit to your factory.

Yours very truly,  
CEMENT BRICK & TILE CO. LTD.  
*Arthur F. Echberg*  
Vice Pres. & Gen. Mgr.



Capacity 24,000 per Day, Modest Capital Starts You

A GROUP of some of the leading men in the building and financial fields in Ontario headed by Arthur F. Echberg were the first to grasp such an outstanding opportunity as the manufacture of DUNBRIK. Mr. Echberg, in his letter reproduced here, expresses himself, in terms to which little could be added to emphasize the merit of this revolutionary development in brick manufacture.

Mr. Echberg's engineering knowledge and international activities in the building field, reinforced with an exhaustive investigation by his associates, convinced them that DUNBRIK line-production machines would enable them to dominate the brick market.

## Investigate While Your Territory is Open

Examine this light-weight, recessed unit,—see the DUNBRIK machine turn out perfect brick, uninterruptedly, in a triple stream at the rate of 51 per minute,—then it will be easy for you to understand why all precedents in production speed and low-cost of manufacture have been effectually revolutionized.

### An Exclusive Business

Visualize the stupendous market for brick,—the most stable building unit of all time,—with plants in actual operation now producing DUNBRIK for less than \$7.00 per thousand,—your ability to supply this market with common, tinted, or face brick, and,—a territory all to yourself, protected by a manufacturing franchise.

### Pay as You Produce

You can install the DUNBRIK machine on a pay-as-you-produce basis. A very modest investment starts you, and the balance as you produce. The TOTAL represents only a fraction of what would be required to start any other business of equal volume and profit. Learn what such an enterprise offers before your territory is closed. Write, and get all the facts today.

## Eight Super Advantages

1. The most revolutionary development in brick-making
2. Super-production Speed—51 brick per minute
3. Recessed for lighter weight, stronger bond, greater permanency
4. 25% more brick to a barrel of cement and yard of aggregate
5. Supplies complete market,—common, tinted, faced
6. Accuracy unparalleled,—true, sharp corners
7. Superior quality—proven by tests
8. A trade-marked unit, backed by a national organization.

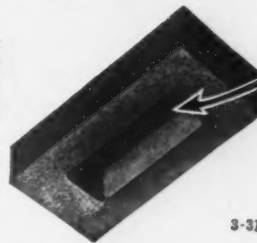
The reservation coupon brings you complete data and gives you first consideration. Act today

## RESERVATION COUPON

W. E. DUNN MFG. CO.  
450 West 23rd St., Holland, Mich.

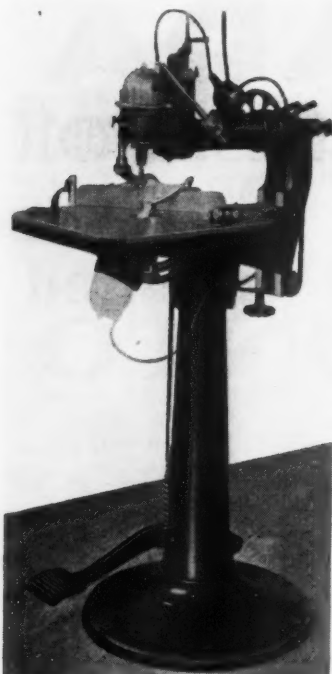
I want to weigh the possibilities for a DUNBRIK low-production-cost plant in this territory. Please send full details covering the establishment of this new industry for my city on your special pay-as-you-produce plan.

Name.....  
Address.....  
City.....  
State.....



### Table Router and Shaper

A NEW combination router and shaper has recently been announced. The motor used on this new model is a new, more powerful, high speed unit, with a rating of one h.p. It can also be used in connection with other machines made by this company.



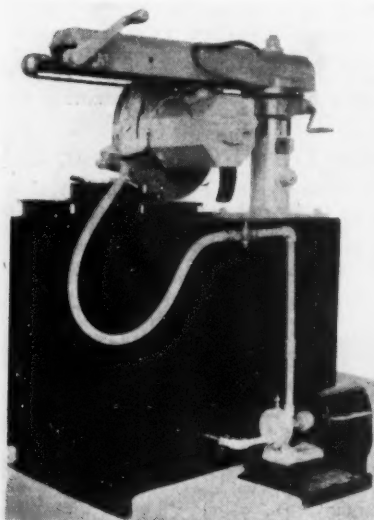
An Improved Combination Router and Shaper.

When the new combination machine is used as a shaper, the motor is placed on the motor holder under the table. The motor can be tilted to an angle of 45 degrees, which allows a great range with small diameter cutters. The top arm may be raised or removed should it interfere with large shaper work.

As a router, the motor is moved from the lower motor holder and placed in the top holder. In this holder, which is supported by the arm, the motor can be raised or lowered by means of a foot treadle to any depth that can be predetermined by three depth stops. A further adjustment of the motor permits its tilting through an arc of 180 degrees. Accurate adjustments of depth of cut are made by turning a threaded ring along the threaded motor casing. A further turn raises or lowers the motor  $\frac{1}{8}$  inch.

### Brick and Tile Cutting

CONSTANT demand for equipment for cutting brick and tile has led to the production of a special unit for this work by one of the producers of high speed cutting equipment. The principle of direct drive power is applied in the new machine, which employs a completely enclosed 4 or 8 h.p. motor, protected from dust and water. With the proper application of cutting blades this machine is adapted to cutting all kinds of brick, tile, terra cotta, cinder blocks, plaster boards and artificial or cast stones.



Designed to Meet a Demand for Brick Cutting Equipment.

The materials may be either cut through or merely scored. The use of water on the wheel assures greatest efficiency and longest wear and, where water is not available, a tank with an automatic pump is provided.

There is an easy adjustment of the angle of cut and a special clamping device on the table tank holds the material at the correct angle. The machine cuts 16 inches, or 24 inches

if desired, in straight cutting, and special long arm models are available for cutting 6, 8, 10, and 12 feet.

### New Heavy Duty Truck

A NEW type of truck, introducing the multi-motor principle, as a means of developing greater power and hauling capacity, has recently been announced. This new truck is a dual-engine, six-wheel, heavy duty model. It is so powerful that double loads in excavation or building construction jobs are possible. It handles four to six yards of wet mixed concrete, or 5,000 to 10,000 bricks or tile in a single load.

The new truck is equipped with two, straight eight cylinder, truck type engines, with a combined power of 275 brake horse power at 2,800 r.p.m. The power is applied to the drive in a radically new way. Each engine delivers power to a separate rear axle.

The engines may be used in combination or one at a time, as each engine has its own transmission. An air mechanism shifts the twin transmissions in perfectly synchronized time. One lever will shift both gears when both engines are in use, making this feature "fool proof."



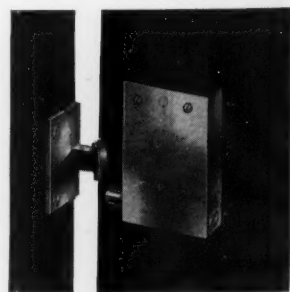
This New Truck Is a Giant Not Only in Appearance But Also in Power and Capacity.

### New Invisible Latch

AN invisible latch has been brought out which is described as a neat, compact device that gives quick, lively action, and is so designed that it may be fitted to all types of secret doors and panels. An adjusting screw back of the pusher or plunger can be regulated according to the weight of the panel or door.

Wall space not previously used can be made to provide additional closet or compartment space, without showing any hardware or marring the appearance of the panel, by means of this latch.

This latch will operate in any position, left or right hand, top or bottom. It is made of cast brass and a template is supplied with each device to assure accurate installation. It is absolutely jam-proof, and has only two moving parts. It is not affected by shrinkage or swelling of doors or panels so long as the door can be opened and shut. To operate, a light push locks it and a slightly harder push releases the latch.



This New Invisible Latch Permits Wall Compartments with No Hardware Showing.

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